

GOVERNMENT OF INDIA

DEPARTMENT OF ARCHAEOLOGY

**CENTRAL ARCHAEOLOGICAL  
LIBRARY**

---

CALL NO.

891.0959105/J.B.R.S.  
25186

D.G.A. 79.







If you wish to become a member or to propose a friend for membership, you are requested to sign the attached slip and forward it to the Hon. Secretary. If not, please pass on the forms to one of your friends.

## BURMA RESEARCH SOCIETY.

**Patron:**

HIS EXCELLENCY THE GOVERNOR OF BURMA.

THE BURMA RESEARCH SOCIETY was founded in 1910. Its objects are the study and encouragement of Art, Science, History and Literature in relation to Burma, and the promotion of intercourse between members of different communities with a common interest in such objects. Meetings are held periodically at University College, Rangoon, at which papers are read. The principal work of the Society is the publication of a Journal, which appears thrice a year and is supplied free of charge to members. Articles by well-known scholars such as Messrs. C. O. Blagden, C. Duroiselle and R. Halliday have appeared in the Journal, but the Editor is chiefly dependent for contributions on Burmese and English members of the Society stationed in various parts of Burma. The articles are mostly on Burmese history, archaeology, literature, art, language, philosophy, religion and folklore. They are of interest not only to scholars but also to general readers who are attracted by Burma and its people. The Editor welcomes contributions from members who have made a study of any special subject or locality. Illustrated articles and articles in Burmese are always welcome. Apart from its Journal, the Society is also publishing Burmese literary and historical works and translations, and in this branch of the activity enjoys the assistance of the best Burmese scholars. It possesses a growing library for the use of members.

The Society is dependent for its funds entirely upon the subscriptions of members. The subscription is Rs. 15 yearly, payable in advance, or a single sum of Rs. 150.

The Society invites applications for membership. Anyone who desires to join, may ask a member to propose him, or may write to the HONORARY SECRETARY, BURMA RESEARCH SOCIETY (Bernard Free Library), RANGOON. The attached form may be used.

To

THE HONORARY SECRETARY,

Burma Research Society,

(Bernard Free Library), RANGOON.

\* I propose for election as a members of the BURMA RESEARCH SOCIETY the name of.....Designation.....  
Address.....

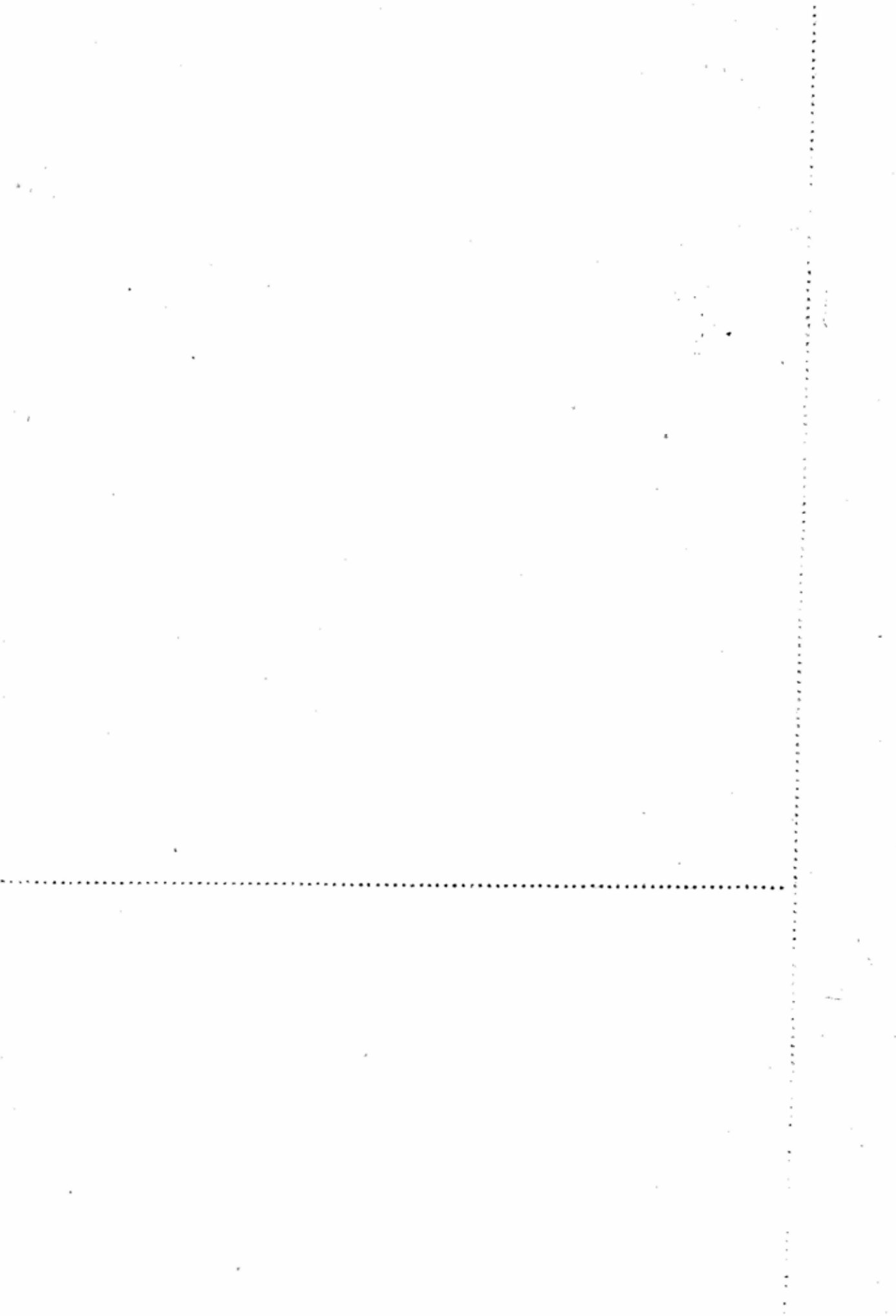
\* I desire to be elected a member of the BURMA RESEARCH SOCIETY.

Name.....

Designation.....

Address.....

\* Delete as circumstances require.





THE  
GLASS PALACE CHRONICLE  
OF THE  
KINGS OF BURMA  
(HMANNAN YAZAWIN)

TRANSLATED BY  
PE MAUNG TIN

AND  
G. H. LUCE,



PUBLISHED BY THE OXFORD UNIVERSITY PRESS

FOR THE TEXT PUBLICATION FUND OF THE BURMA RESEARCH SOCIETY

The *Glass Palace Chronicle*, the most important of the native histories of Burma, was compiled in 1829, by a committee of scholars appointed by King Bagyidaw of Burma, who based their work on earlier chronicles, inscriptions, and other ancient records.

The present translation omits the first two parts of the Chronicle, as they merely retell the story of Buddhism and of the Buddhist kings of Ancient India, and begins at the point where the story moves to Burma. The third part opens with the history of the three Burmese kingdoms of Tagaung, Tharehkittara and Pagan. The fourth and fifth parts of the present volume cover perhaps the most interesting period of Burmese history, that of the kingdom of Pagan—the city on the middle Irrawaddy a hundred miles below Mandalay, whose noble temples and vast ruins still, astonish visitors. The volume closes with the fall of Pagan (1287 A. D.), consequent on the invasion of Burma by the armies of Khublai Khan. It is hoped that the response to this publication will justify the Burma Research Society in continuing the translation and adding notes in subsequent volumes.

**ORDER FORM FOR MEMBERS ONLY.**

Special Reduced Price for Members of the B. R. S. Rs. 5 per copy  
(in paper covers).

To

**THE HONORARY SECRETARY,**

**Burma Research Society.**

(Bernard Free Library), RANGOON.

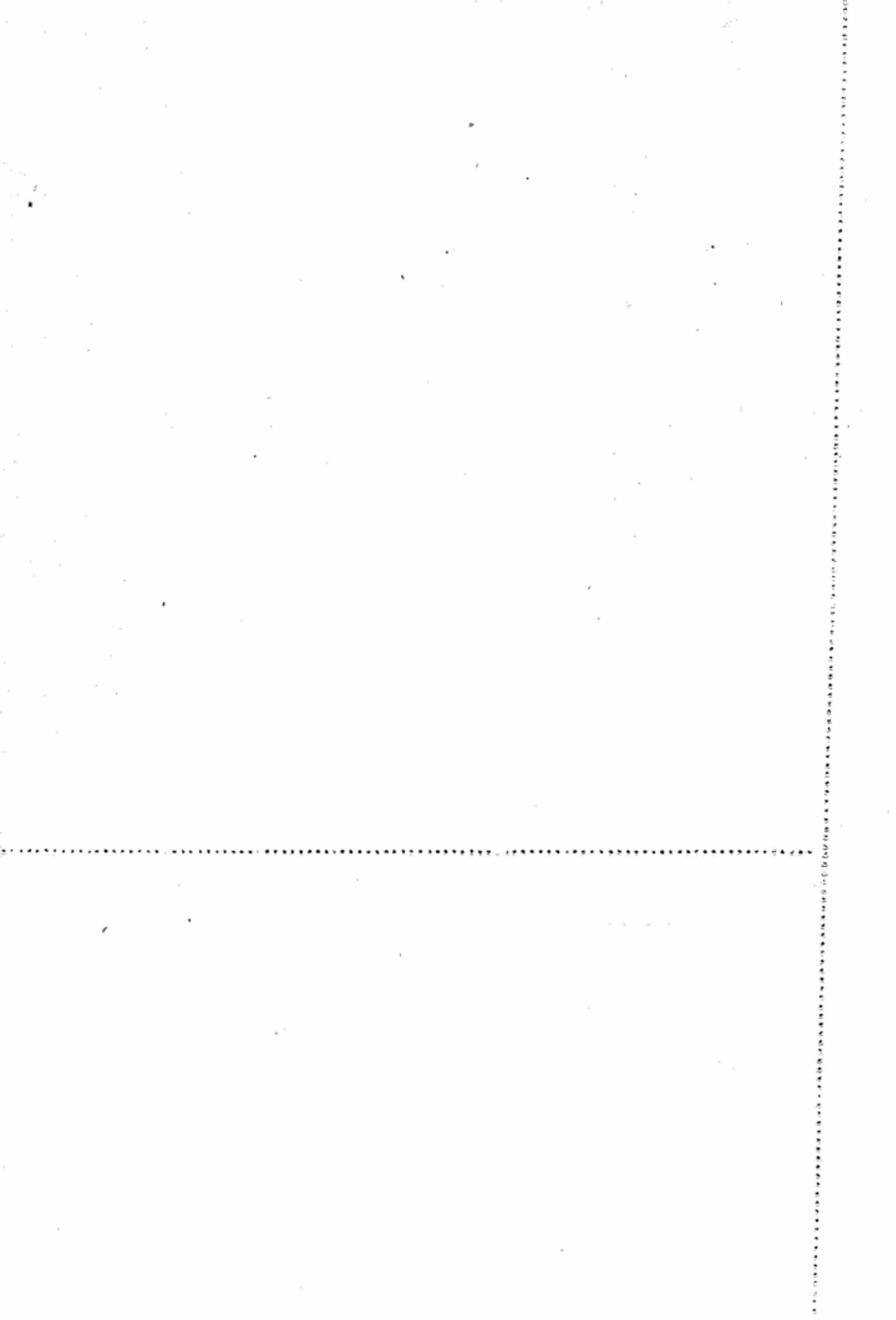
DEAR SIR,

I am a member of the Burma Research Society. Please send  
me.....<sup>copy</sup><sub>copies</sub> of the translation of the Glass Palace Chronicle for  
which I enclose the sum of Rs.....<sup>V.P.P.</sup>

Name.....

Designation.....

Address.....



# BURMA RESEARCH SOCIETY

## PUBLICATION SERIES.

*General Editor*—Professor PE MAUNG TIN.

### *Volumes Already Published.*

Burmese  
Texts No.

1	Owada-du Pyo by Seinda Kyawthu—Pyigyimundyne Press	Rs. A. 0 6
2	Dewagomban Pyazat by U Kyin U—Aungzeyatu Press....	0 6
3	Ommadandi Pyo by Hsameikkhon Ywaza—Pyigyimundyne Press	0 8
4	Kandaw Mingyaung Myittasa—Kawi Myet-hman Press	1 0
5	Maung Kala Mahayazawingyi Vol. I—Pyigyimundyne Press	4 0
6	Padetha Thigyin by U Kyin U—Pyigyimundyne Press ....	0 4
7	Papahein Pyazat—Pyigyimundyne Press	0 6
8	Yezagyo Hkondaw Pyatton—Hanthawaddy Press	1 4
9	Uteinna Pyo by Monywa Sayadaw „	2 4
10	Pyinsa-papi Rakan by U Shwe Ni—Aungzeyatu Press ....	0 8
11	Selections from Jataka Stories—Hanthawaddy Press	2 4
12	Thutathoma Pyo by Hsameikkhon Ywaza—Sun Press ....	1 8
13	Shwe Pyizo Wuttu by U Lat—Kawi Myet-hman Press ....	2 4

[*Translation into English*: The Glass Palace Chronicle.  
A translation of the Hmannan Yazawin by Pe Maung Tin and G. H. Luce, Oxford University Press].

[The General Editor would be grateful to receive information about copies or manuscripts of U Kyin U's Winkanta Zat and U Ponnya's Myittaza and other rare works.]

891.0959/05  
J. B. R. S.

25186

A353

CENTRAL ARCHAEOLOGICAL  
LIBRARY, NEW DELHI.

Acc. No.....25186.....

Date.....14.1.57.....

Call No.....~~891.05 J.B.R.S.~~.....

891.0959105

J. B. R. S

# THE BURMA RESEARCH SOCIETY.

(FOUNDED 1910)

*For the Study and Encouragement of Arts, Science, History and Literature in relation to Burma.*

## PATRON.

HIS EXCELLENCY SIR CHARLES ALEXANDER INNES, K.C.S.I., I.C.S.

## COUNCIL.

### *President.*

C. W. DUNN Esq., C.I.E., I.C.S.\*

### *Vice-Presidents.*

U SHWE ZAN AUNG, B.A., K.S.M., A.T.M.

THE HON'BLE MR. JUSTICE U BA, B.A., K.S.M.

J. S. FURNIVALL, Esq., I.C.S. (Retired).

### *Honorary Secretary.*

B. R. PEARN, M.A.\*

### *Honorary Treasurer.*

AHMED CASSIM, Esq., B.A.\*

### *Honorary Editors and Librarians.*

PROF. PE MAUNG TIN, M.A., B.Litt., I.E.S.\*

PROF. F. J. MEGGITT, M.Sc., Ph.D., I.E.S.\*

### *Executive Committee.*

The Office Bearers of the Society and

U TIN, K.S.M., A.T.M.

L. F. TAYLOR, Esq., M.A., I.E.S.

U. E. MAUNG, M.A., LL.B.,

*Bar-at-Law*

THE HON'BLE MR. Justice U MYA

*Bu, Bar-at-Law*

U Po SEIN, A.T.M.\*

U TUN PE, M.A., B.L., M.R.A.S.\*

D. J. SLOSS, Esq., M.A., C.B.E., I.E.S.

Prof. D. G. E. HALL, M.A., I.E.S.\*

S. G. GRANTHAM, Esq., B.A., I.C.S.

MEER SULEIMAN, Esq., M.A.

U MAUNG GALE, (8), K.S.M.

G. H. LUCE, Esq., M.A., I.E.S.

J. CLAGUE, Esq., I.C.S.

U SET, B.A.

A. BROOKES Esq., M.A., I.E.S.

### *General Committee.*

The Members of the Executive Committee and

M. S. COLLIS, Esq., I.C.S.

U THEIN

MAJOR C. M. ENRIQUEZ.

U KYI O, B.A., K.T.M., K.S.M.

TAW SEIN KO, Esq., C.I.E.

H. F. SEARLE, Esq., I.C.S.

DR. O. HANSON,

D. B. PETCH, Esq., I.C.S.

U SAN SHWE BU,

CHAS. DUROISSELLE, Esq., M.A.

U THA TUN AUNG, B.A.

J. A. STEWART, Esq., M.A., I.C.S.

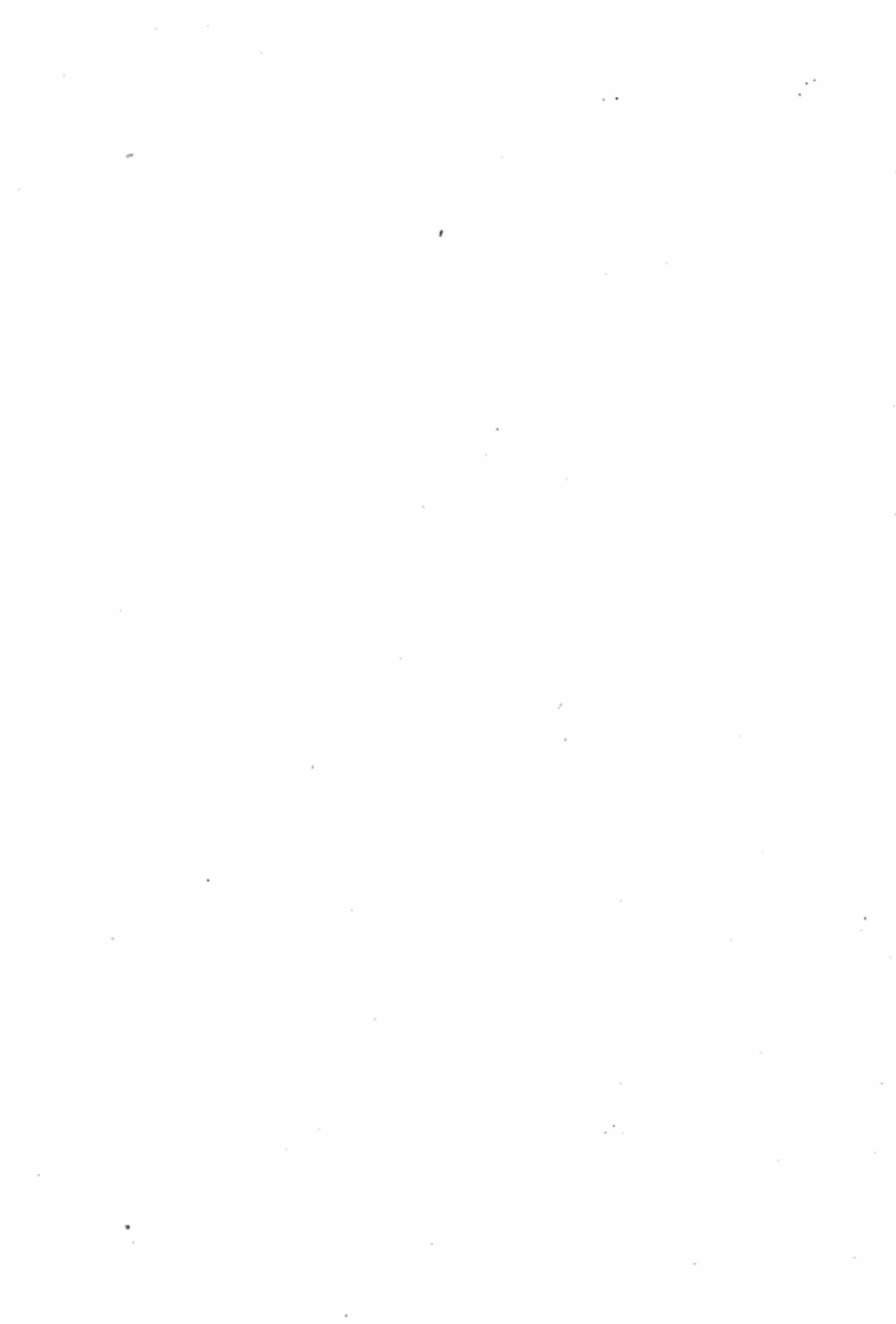
U HLA, B.A.

U THA KIN,

G. E. HARVEY, B.A., I.C.S.

\*Members of the Sub-Committee.





# JOURNAL OF THE BURMA RESEARCH SOCIETY.

## Vol. XVIII, Part I.

### C O N T E N T S .

PAGE.

1. New light upon British Relations with King Mindon by D. G. E. Hall, I.E.S. .. ..	1
2. The Greek Anthology by J. A. Stewart, I.C.S. ..	12
3. A Short Account of Taungthas by U Than Tin ..	16
4. Talaing Inscription translated by C. O. Blagden and Pe Maung Tin .. ..	21
5. Medieval Burmese Courtship by U Tha Kin ..	35
6. An old Arakanese Romance by M. K. .. ..	44
Proceedings .. ..	i
List of Recent Additions to Library ..	xvii
List of Members for 1927 .. ..	xxv
Index for 1927 .. ..	xxxiv



## NEW LIGHT UPON BRITISH RELATIONS WITH KING MINDON.

*Paper read at the Annual General Meeting of the Burma Research Society  
at University College, Rangoon, on March 9th, 1928.*

The object of this paper is but incompletely expressed by its title. My intention is to give a close-up view of some of the negotiations carried on between the British and Mindon Min shortly after the close of Second Burmese War, when, subsequent to the breakdown of the first negotiations, further attempts—ultimately abortive also—were being made by Lord Dalhousie to conclude a treaty with the Burmese Government giving formal recognition to the British possession of the province of Pegu. Any attempt to go into details within the short space of forty minutes imposes a severe limitation of the period to be covered. I shall limit myself therefore to certain incidents occurring in the years 1853 and 1854.

The materials upon which this survey is based are almost entirely unpublished and in manuscript. While I am able to say that the greater part of the evidence that I shall give you has never before seen the light of day in any historical writing, I must qualify that statement by saying that one writer, the late Sir William Lee-Warner, in compiling his "Life of the Marquis of Dalhousie" utilised two of my sources: Lord Dalhousie's private correspondence with Captain Arthur Phayre, 1852-56, eighty of the original letters of which are now in the possession of the University of Rangoon, and the letters of Thomas Spears, Government Correspondent at the Court of Mindon Min, to Phayre, copies of which I have been able to procure from the Imperial Record Department at Calcutta through the courtesy of Mr. A. F. M. Abdul Ali, Keeper of the Imperial Records, and by permission of the Government of India. Also by permission of the Chief Secretary to the Government of Burma I have been able to make use of certain of the old files in the Rangoon Secretariat relating to Thomas Spears.

One further source of information drawn upon for this paper is a published collection of Lord Dalhousie's private letters to his life-long friend Sir George Couper, edited by Mr. J. G. A. Baird. A year ago in a paper dealing with Sir Streyntsham Master's attempts to open up trade between the East India Company and Burma, which I had the privilege of reading to this Society, I tried to show how important are the materials in the Madras archives for a study of the early British connexion with Burma. This evening in giving you a glimpse of other materials for the study of a later period of the same subject, I wish to convey to you some idea of the fascination of the subject, and of the wide field, still mainly unploughed, which lies open to the researcher.

In introducing my subject it is unnecessary for me to deal with either the causes or the course of the Second Burmese War. Suffice it to say that the British landed at Rangoon on April 5th, 1852, and by the middle of December of that year the province of Pegu had been subjugated, and the road lay open to Amarapoora. The Secret Committee of the East India Company then wished to conclude peace, if the Burmese Government would make formal cession of the conquered territory: if not, the advance was to be continued under General Godwin to the capital itself. Lord Dalhousie, the Governor-General, however was opposed to this policy. In his opinion Eastern nations such as the Burmese "set little store" by treaties, as he expressed it. A treaty would provide no barrier against further hostilities. He felt also that the Government of India could not safely carry out an attack upon Amarapoora, with all that such a move involved, when on the other side of India it had barely completed the reduction of the great Sikh power.

Dalhousie therefore adopted the course of writing to Pagan Min, King of Burma, announcing his annexation of Pegu, and asking him to send duly accredited agents to negotiate a treaty recognising its cession, and granting Great Britain liberty of trade with Upper Burma. The threat of marching upon Amarapoora was suppressed. The Burmese Government, true to Dalhousie's expectation, entirely disregarded his letter. So on December 20th a British proclamation was issued announcing to the world the annexation of Pegu. Shortly before this Captain Arthur Phayre had been sent out as Governor-General's Agent and Commissioner of Pegu. Under him rapid measures were taken for the settlement and administration of the new province, and for defence against a possible recrudescence of Burmese attacks. All attempts to negotiate with Pagan Min failed. But early in 1853 a revolution occurred at Amarapoora: Pagan Min was deposed by his half-brother Mindon Min. The new ruler was a man of high character who from the moment of his accession adopted a friendly attitude towards the British. As soon as possible he despatched envoys to discuss terms with the British at Prome. But when a draft agreement was laid before them, fixing the British boundary on a line from east to west running six miles north of Meaday, the Burmese, after a pathetic appeal to Phayre and Godwin to restore Pegu, refused to sign, and direct negotiations broke down.

We now come to the subject of my paper. Direct negotiations between the British and Mindon Min having broken down in the hot season of 1863, an anomolous situation had arisen. The war was over, but the Burmese Government had rejected the British peace offer. The British did not intend renewing the war; the Burmese could not do so. The British held Pegu; the Burmese refused to recognise the fact. Mindon Min was anxious to cultivate friendly relations with the British, but would commit himself to nothing of a formal nature. Fresh Burmese overtures were expected by both Dalhousie and Phayre. In the meantime

## NEW LIGHT UPON BRITISH RELATIONS WITH KING MINDON.

it was felt that in the absence of direct contact with the Court of Ava some sort of indirect means of communication must be established. In June 1853 therefore Phayre was requested by the Government of India to make the necessary arrangements. In his private instructions to the Commissioner Dalhousie wrote thus:—

“ I am solicitous regarding our intelligence department. It is the one in which the British Government in India has for long been least efficient. It is mentioned to you publicly. I allude to it again in this letter in order to say that for speedy, good and regular intelligence I shall grudge no expence. The value of it to us with such a frontier and in the anomalous circumstances in which we are placed is too obvious to require comment.”

In the following month Phayre heard of a Scottish merchant at Amarapoor, one Thomas Spears, a *persona grata* at the Burmese Court, who was willing to become news-agent for the British. Mindon Min also seems to have been anxious to use Spears as a go-between with the British, and had communicated to him certain peace proposals, which the Governor-General had unceremoniously dubbed “ nonsense”, when they were reported to him by Phayre. At first, however, Dalhousie hesitated regarding the employment of Spears as British agent. “ At first sight I doubt the expediency of employing Mr. S. as a correspondent at Ava,” he wrote privately to Phayre on August 1st, 1853. “ His being so could hardly be kept secret. If it were known, he would be liable to outrage; and if outraged he would from his quasi-official character and his British birth, be of more importance than another might be; and so would be more likely to involve this Government in responsibilities.” Spears therefore was not immediately engaged by Phayre for this delicate task.

In the meantime very conflicting reports of conditions in Upper Burma reached the Governor-General and rendered the receipt of sound intelligence all the more essential. On the one hand from Captain Latter on the British frontier came alarmist rumours of Burmese preparations for a fresh attack. “ I am extremely displeased with Captain Latter,” wrote Dalhousie to Phayre on August 30th. “ For months past I have received through the Military Commander letters from him containing “ authentic” intelligence of attacks from Ava, particularised with the utmost speciality as to amount, date and direction. One is now before me in which he states that unless his advice is immediately acted upon “ the country will be ravaged to the walls of Rangoon.” Whatever Captain Latter’s personal courage may be—and nobody doubts it—he does as much mischief by such incendiary gossip as this—nay more mischief—than could be effected by the most arrant coward in the same situation. Many of his predictions have already been falsified, and if no foundation is shewn—as I believe none exists—for this one, I shall most certainly remove Captain Latter from his charge. Whether another charge can be found I do not know: but a man such as this upon a frontier eternally crying ‘ Wolf’ is a public nuisance, and must be removed as such, whatever may become of him.”

On the other hand Phayre forwarded to his Chief a letter from an Armenian named Jacob, at Amarapoora, who assured the British Government of the pacific intentions of Mindon Min. This seemed to Dalhousie far sounder information, and still further confirmed him in his view that some reliable source of intelligence at Amarapoora should be sought out. "Good intelligence is especially valuable to me when pestered with the gossiping panics of officers on our own frontier," he wrote to Phayre on September 18th. "Pay, therefore, whatever may be liberal. It might perhaps tend to ensure trustworthy news to give a fixed salary and to say that at the end of each year a further sum will be given, if during the course of it intelligence of all public events shall have been given, *regular, early and correct.*" Jacob's information was confirmed by Father Paulo Abbona, an Italian priest resident in Amarapoora, who came to Phayre in October bearing a letter from Mindon Min asking permission to make the usual royal gifts to pagodas in Pegu. The father assured Phayre that there were "no preparations for war, and no means for it, and no intention of it."

Jacob's appointment as intelligence agent for the British in Amarapoora was probably due to Dalhousie's objections to Spears, which I have already mentioned. On this matter, however, the Governor-General soon began to change his mind. During the later months of 1853 Spears was in Calcutta on business, and at Phayre's suggestion was granted an interview by Dalhousie. Evidently Dalhousie was more favourably impressed by his capabilities than by what he was able to judge of Jacob's. Thus on November 5th we find him writing laconically to Phayre: "I have read Mr. Jacob's letter. I hope his intelligence is more correct than his spelling, or we shall not have a good bargain. I will see Mr. Spears again." So in the end Spears was appointed "Government Correspondent at the Court of Ava" on a monthly salary of Rs. 250 with the promise that if his intelligence were "*regular, early and correct,*" as stipulated by Dalhousie, his salary at the end of each year of service should be made up to Rs. 400 a month by a lump sum, authorised by the Government of India upon the recommendation of the Commissioner of Pegu. No better appointment could have been made. Spears not only proved himself a first class purveyor of intelligence, but his advice on political matters was of great value to the British in consummating friendly relations with Mindon Min during a critical period in the history of the British Empire. Spears won the complete confidence of Mindon Min. His appointment was made with the full knowledge of the Burmese Government, and Mindon Min apparently discussed matters of policy with him as if he were the official agent of the British Government. This went so far that in August 1855 we find Fort William stiffly reminding Phayre that there seemed to be a tendency to forget Spears's exact position at Amarapoora, and explaining that he must not be employed in any official matter to make representations to the Court of Ava, or to act in any way apparently as an agent of the British Government,

## NEW LIGHT UPON BRITISH RELATIONS WITH KING MINDON.

This remonstrance should rather have been addressed to Mindon Min. So useful did he find the British correspondent that he was always pressing upon him business that should have gone through official channels. A few extracts from Spears's letters to Phayre will illustrate my point. On February 4th 1854 he wrote: "When at the palace yesterday, by the orders of the King, I wrote to you a letter expressing his sentiments on the manner in which the boundary has been advanced at Toungoo. I could not well refuse to write this letter, and hope that you will not be offended at me for having done so. I have also to apologise to you for having written another letter in something the same style on the 7th January. . . . . One reason for my having complied with the wish of the King to write these letters was that they will put you in possession of what both the King and Prince think on the boundary question. I did my best to express myself exactly as they told me to write."

Another letter dated February 20th, 1854, throws further light upon the curiously anomalous position of Spears at Amarapoora. "Yesterday Father Abbona and myself were again sent for by the King and had a long talk with him in private. He asked us repeatedly if we were quite certain that the English would not seek a cause of quarrel with him, and if we were sure that they would not advance their border further to the northward. We both told His Majesty that he might keep himself quite easy on these points, as we had good reason to believe that the English would not without sufficient cause think of quarrelling with him, and that we were morally certain that they had not the slightest intention of encroaching further in his dominions. I then reminded the King that I had told him that same thing on my arrival here two months ago. That is that you would run the boundary line due east and west, six miles to the northward of Meeaday, but would go no further. "Yes (the King said) but will you stand security that they will not suddenly advance upon me if I withdraw all my forces from the border." I told him that I would do so. He then said "I am happy to hear what you say, and in the course of a day or two will send orders to withdraw all my troops from Toungoo and other stations on the boundary, only keeping a few hundred men as a guard a little to the northward of Toungoo and Meeaday." I then asked His Majesty if he wished me to communicate this to you, and he said "Yes, certainly do so." His Majesty also remarked that when his troops are withdrawn the English will not be so much troubled with robbers as they have been for some time past."

I cannot refrain from quoting yet a third extract from these interesting letters showing how strongly Mindon Min acquiesced in the intelligence work carried on by Spears on behalf of the British authorities. Writing on February 28th, 1854, Spears reported: "Three days ago a petition arrived from the Commander of the King's forces stationed to the northward of Toungoo stating that letters had been received from



the officers in command of the English troops there demanding the delivery of certain Burmese robbers that had been captured by the Burmese authorities. The petition to the King stated that these men had been committing depredations on both the English and Burman sides of the boundary, and that they having heard of the whereabouts of these robbers had sent a force against them, that several were killed in the fight and some others taken prisoners; that the prisoners, after examination, having been found guilty were put to death, etc. The King told me to tell you that it is impossible for him to say whether his people are right or wrong in the affair and when you next write to Captain Phayre tell him from me that when there are any disputes on the border, I would feel pleased by his communicating with the Woongees at the Loot daw direct, giving the full particulars of the case, and to discourage as much as you can, any correspondence between the English and Burman officers on the border." In a postscript to this letter he added; "The Burmese General in Command of the King's forces to the northward of Toungoo has been recalled, and is in disgrace. The King being a little afraid that his exploits there in the robber case may get him into trouble. He will very likely be put into confinement on arrival here."

From early in January 1854 until at least 1860, (so far as I can trace) with the exception of an interval during the dry monsoon of 1856-7 when he went to Calcutta to make purchases on behalf of Mindon Min, Spears acted as British correspondent at the Burmese Court. It was not long before Dalhousie began to rejoice over the new appointment. "Mr. Spears' letters are very intelligent and interesting as well as business-like," he wrote to Phayre in May 1854, "His intelligence is very satisfactory, if it is correct, and everything that has yet occurred goes to show that it may be relied upon." Earlier in March he had written home to his old friend Sir George Couper: "We have already so improved communications that our last letter from Umerapoora was only nineteen days old. There is perfect quiescence, and the King is actually withdrawing from the frontier his whole troops. Nay, the *entente cordiale* is becoming almost ludicrous. For at this very time at which the Press is telling everybody that the Burmese are coming down with 80,000 men to invade us, I am actually making a contract with the King himself to sell us all the wheat in Burmah—he monopolises the whole—for our commissariat in the province which we have just conquered from him! Don't mention this, for I have not reported the bargain here till it shall have been completed. But is it not a comical fact!"

The reference here is to a stroke of good policy carried out by the British authorities in Burma through the instrumentality of Spears soon after his arrival at Amarapoora. When the British first took over the new province of Pegu, its economic condition may be described as utterly poverty-stricken. This state of affairs is said to have been due to the fact that under Pagan Min no attempt was made to give good administration to the more strictly Talaing districts of the Burmese dominions.

No check was maintained over the Burmese officials there, who are alleged to have made use of every form of corruption and intimidation to squeeze the Talaings dry. The first British census returns showed the population of the province of Pegu as less than six hundred thousand souls. The rice, that was grown in what was later to become one of the richest agricultural districts in the world was little more than would provide for the bare subsistence of its inhabitants. Practically no wheat was cultivated.

The British army of occupation therefore was faced by a serious commissariat problem. The British advance in Pegu had occurred during the rice planting season of 1852. The work had been utterly dislocated, with the result that so severe a famine occurred that it was said that men murdered each other for a handful of rice. Upper Burma produced hardly enough rice for its own needs: in a lean year it was obliged to import from the south. It did actually produce, however, a small surplus of wheat and gram, trade in which was a royal monopoly. Early in 1854, therefore, we find the much-harrassed Phayre writing to Spears asking him to find out if, and on what terms, the Burmese government would be willing to supply the British with these much-needed commodities.

Spears's reply was hopeful. "I told His Majesty that you had been writing me to make enquiries about wheat," he wrote on February 13th, "and that if it could be procured at a moderate rate you would take a large quantity for Commissariat purposes, but that you must first know the price. Upon which the King said I will not fix any price but you can write Captain Phayre and ask him what he will give me for new wheat per hundred baskets, to be delivered at Prome, the money to be paid to an agent sent from here for the purpose of receiving it. There will be from 15,000 to 20,000 baskets altogether, and if your offer is at all liberal I have not the least doubt but that it will be all sent to you. When you write me kindly let me know the highest price you are willing to give and the quantity that will be required. I say the highest price to prevent disappointment, but I will, as a matter of course, do my best to get it at a moderate rate; the new wheat will be ready for cutting in about a month hence. The supply of gram will not be so plentiful as that of wheat; but I do not think there will be less than ten thousand baskets of it. As this will also be in the hands of the King you can make an offer for it in the same way as you may do for the wheat.

I do not like the monopolising spirit that prevails here at present, and will always do everything I can to persuade the King against it. Rubies, Timber, Cutch, Hartal, Cotton and, in fact, every article of produce it is the King's intention to monopolise. He expects to make a profit sufficient out of these monopolies to pay all the expenses of his government and he says, that when he can do that he will not levy

any more taxes from his people. But as the King is a very intelligent man, I trust he will soon find out that monopolies in any shape are much more injurious to the country than any other mode of taxation."

In his next letter dated February 18th Spears reported that Mindon Min had altered his original intention of waiting for the British to make him an offer for his wheat and gram, and had stated definitely that the wheat would be delivered at Prome for Rs. 250, and the gram for Rs. 200, per hundred baskets. "The price of the wheat may be a little high," added the canny Scot, "but I trust you will be able to take it, as it would please the King very much."

In his next letter dated March 7th, Spears considerably reduced his original estimate of the amount of wheat and gram available for sale in Upper Burma. "His Majesty was somewhat surprised when he heard of the quantity of wheat and gram wanted for commissariat purposes," he wrote. "It would be utterly impossible to supply that quantity for some years to come." And he proceeded to say that he thought that ten to twelve thousand baskets of each kind of grain would be the utmost procurable during that season. On the other hand Dalhousie, in according sanction for the purchases, wrote to Phayre that through the Commissioner-General he had heard that the Commissariat Department in Burma had already arranged for the delivery of 20,000 baskets of wheat at Prome. "The purchase of grain has of course been approved," he wrote. "It would be a good stroke of policy to take it, whether we wanted it or not." With regard to Spears he wrote in the same letter (March 29th); "and we have apparently found a very safe and sensible and judicious correspondent." So a system was established whereby the British bought grain "from the royal granaries at a right royal price," as Sir William Lee-Warner, Dalhousie's biographer, puts it; and Mindon Min could partly console himself for the loss of the fair province of Pegu with the handsome profits he derived from supplying the British army of occupation with food—truly a Gilbertian situation. Later on the price was lowered, and with the reduction of the Pegu garrison from a war footing to a peace footing, the system was discontinued.

In the limited time at my disposal I can deal with only one other episode in the history of early British diplomatic relations with Mindon Min. Throughout the year 1854 Lord Dalhousie still entertained vague hopes that the Burmese Government would actually consent to the signature of a peace treaty recognising the British possession of Pegu. To this end Phayre was constantly exhorted to use all his endeavours. "Exhaust all your art to succeed if you can. If you don't, no blame will be imputed to you," wrote the indefatigable Governor-General on March 29th. Every possible inducement to sign was held out to Mindon Min. Phayre was even instructed to promise the gift of the steamer so

much desired by the King, if he thought it "would help to tug through the negotiation." Another lever used in the attempt to move him was the fact that the boundary-line laid down by the British passed through the district of Mindon, and thus cut off from Upper Burma a portion of the King's own personal appanage from which he derived his title. Thus in his letter of March 7th Spears wrote as follows :—

"The Burmans are a very curious set of people. When I came up here two months ago, I made it a point to tell the King, that from what I had heard in Calcutta and Rangoon, the English Government would upon no account I thought modify the boundary question. But that they would draw the boundary line due east and west from a point marked three toins to the northward of Meeaday. The King of course did not like this news much, but thought it better to let you have every thing your own way; and so directed me to write to you the letter of the 7th January (which you now acknowledge). I did so and thought the matter was all settled. But yesterday the King called me again and showed me a petition that had been received from his people at Meendoung Myou, stating that they had heard that the English intended to come up and occupy that part of the country, also requesting to know how they should receive them if they should come, etc. I told the King that I had no doubt but that it was the boundary line that they were extending to the Arracan hills on the west side of the river, reminding him at the same time what I had told him on that subject long ago. His answer to me was nearly as follows; 'I am not quite certain whether Meendoung Myou may or may not extend in some of its parts a little to the southward of the boundary line at present being laid down by the English. But it is a district of little value and belonged personally to me when I was a Prince, so I trust the English will not let so small a thing as that come between us. When I was Prince, and now when I am a King, I have always been actuated by the most friendly spirit to the English, and it would be a poor return on their part if they would not give up so small a thing as that to oblige me. All my subjects will look upon their taking that part of the country as a personal insult offered to myself. Tell Captain Phayre that I have acquiesced to their extending their boundary to the northward of Toungoo and other parts without grumbling, and that I trust he will make the boundary line on the west side of the river take a small curve to the southward, if it should unfortunately happen that the Meendoung lands run to the Southward of the boundary.' If you could possibly let him retain that part of the country, (I believe only some two or three villages are to the southward of your line)," continued Spears in a postscript, "it would have the best effect on him and all his people. Perhaps it might even induce him to sign a treaty, but I have no authority for stating this."

Dalhousie's reply, when this question was referred to him, was characteristic. Provided there were no serious military objections, he was willing to allow the proposed rectification of the frontier, but upon one condition—the treaty must be signed. "If the King thinks that 'so small a thing' as a township should not stand in the way of friendship, he should not let 'so small a thing' as signing what he has already agreed to, stand in the way of a permanent friendship between the states," he wrote to Phayre. "If the King thinks that I should make this concession of Mengdon Myo to him, I have the right to expect that he should make the far smaller concession of saying in writing what he has already said orally many times." "Bear in mind," he wrote later in the same letter, "that for the King it is 'no song, no supper—no treaty, no Meengdon Myo.'"

The treaty, of course, never materialised. The entirely incompatible attitude of each side regarding the matter is clearly shown throughout the negotiations. The British could not understand why Mindon Min, faced by a *fait accompli*, had not sufficient sense of reality to recognise it by a formal act. Mindon Min was playing no deep game; he dared not sign, 'for shame at yielding territory,' as Mr. Harvey has truly observed. Should he commit such a base act, he expected his people as one man to rise up and dethrone him. But there was more behind it than that. In the years 1853 and 1854 the British were engaged in a serious quarrel with Russia. During the course of the latter year this had developed into a great war, now known as the Crimean War, in which Britain, France and Turkey were ranged against Russia. Mindon Min believed that the British power in India was about to crumple up; that he had only to bide his time and the British would be forced to evacuate Burma, without the necessity for any action on his part.

A letter from Spears to Phayre, dated 30th April 1854, the original of which is now in the Rangoon Secretariat, gives an excellent key to Mindon's attitude. "The King and Prince," he wrote, "have got it into their heads at present that you will not be able to retain Pegu for a year, not that they have the least intention of trying to drive you out, but that they think you will be forced to withdraw all your troops for the defence of Hindustan, at present (it is supposed by them) threatened with a terrible invasion of Russians, Persians, etc., etc. They have formed this opinion from having parts of the Calcutta and Rangoon newspapers translated to them by their people, who always pick out the pieces they think will please most, exaggerating as much as possible any thing they think may tell against the English. Two of the Armenians at present here are doing a great deal of harm in this way. They don't call themselves British subjects now, but say that they belong to Russia. The King still continues to express the most friendly feeling towards the English, but he has got many bad advisers. However there is one thing

that you may, I think, be perfectly sure of, and that is that he will never attack you."

Spears was correct in his prognostication. Whether or no Mr. Harvey is right in assuming that Mindon Min refrained from taking advantage of the situation to attack the British, because he 'held it dishonourable to strike a friend labouring in misfortune,' the fact remains that throughout both the Crimean War and the Indian Mutiny, which followed it, the kindly monarch never made the slightest aggressive movement against British Burma. Other reasons, however, may account for this. Not only was he a Buddhist of deep and true piety, but he seems to have had a natural shrinking from bloodshed. Also he was, as Spears asserts, a very intelligent man; and he probably realised even in the darkest days of the Mutiny that his own military resources would be powerless against armies organised and equipped like the British. Nevertheless no small credit for the successful cultivation of good relations between Mindon Min and the British must be attributed to Thomas Spears. During six years with clear insight and consummate diplomatic ability he acted as adviser both to Mindon and to the British in all matters regarding their relations. To both he gave straightforward honest advice calculated to serve their best interests: advice that did not fall upon deaf ears where such men as Mindon Min, Arthur Phayre, and Lord Dalhousie were concerned. It is interesting to discover among the old files in the Rangoon Secretariat a number ranging from 1855 to 1860 showing that at the end of each year of his service it was recommended by the Commissioner of Pegu, and sanctioned by the Government of India, that Spears's salary should be made up to the Rs. 400 a month promised him at the outset, if his correspondence were "*regular, early and correct.*"

D. G. E. HALL.



## THE GREEK ANTHOLOGY—BURMA PARALLELS.

The most famous of all anthologies contains poems by over three hundred authors composed in the period between 100 B.C. and 900 A.D. They are nearly all short poems—often no longer than a Burmese *dwegyo*—and deal with a great variety of subjects. Some, dealing with country life and primitive conditions of agriculture, are certainly more intelligible to one who has lived in Burma than to the ordinary classical scholar. The parallels quoted below may have an interest for the student of folk-lore. The edition of the anthology used is Didot's, of 1864 but the first and last of the Epigrams quoted are also to be found in Mackail's selection, 1907.

δυσκώφῳ δύσκωφος ἐκρίνετο· καὶ πολὺ μᾶλλον  
ἦν ὁ κριτῆς τούτων τῶν δύο κωφότερος.  
ὦν ὁ μὲν ἀντέλεγεν τὸ ἐνοίκιον αὐτὸν ὀφείλειν  
μηνῶν πένθ'· ὁ δ' ἔφη νυκτὸς ἀληλεκέναι.  
ἐμβλέψας δ' αὐτοῖς ὁ κριτῆς λέγει, ἐς τί μάχεσθε;  
μήτηρ ἔσθ' ὑμῶν· ἀμφότεροι τρέφετε.

(By Nicarchus. xi. 251.)

"One very deaf man went to law with another very deaf man; and the judge was much deafer than either of them. The one party said that the other owed him house rent for five months; the other that he had done the grinding by night. The judge looking at them said, "what are you disputing about? She is your mother; let both of you maintain her."

Stories of deaf men at cross-purposes are common in Burma. I published one in the Burma Research Journal (Vol. III page 55, June 1913). The following is an abridgement.

*1st deaf man*—I have lost my goats. Did you see them?

*2nd deaf man*—All this land is mine from here up to there (pointing).

*1st deaf man* (goes in the direction pointed, finds his goats and comes back.)—I am very grateful to you. Please accept this lame goat.

*2nd deaf man*.—I know nothing about it. I did not break its leg. (A dispute arose and they went to the judge, who was also deaf.)

*1st deaf man*.—Out of gratitude I offered him this lame goat. He wants a sound one which I can't give.

*2nd deaf man*.—I did not break its leg.

*The Judge.*—Don't come to me and ask me to take the woman back. I won't.

There is another fairly well known story of the adventures of a deaf novice among three other deaf people. My record of this is in Burmese and is reproduced below.

လူကလေးအဘပုံပြောမနေနီ။ ဘယ်ပုံပြောမလဲအဘရယ်။ နားကန်းတဲ့လူ ၄ ယောက်အကြောင်း ပြောမယ်ကွယ်။ ကျောင်းကကိရင်ကလေးနားထိုင်းထိုင်းကွဲ့။ ဆေးသွားပီးတော့အလှူခံချေပါလို့ ဆရာဘုန်းကြီးကခိုင်းတယ်။ ကိရင်ကလေးကကြားတာက။ ပုန်းရေတောင်းချေပါကြားလေတော့။ ရွာထဲသွားပီးပုန်းရေတောင်းရော။ ပုန်းရေတောင်းတာကလဲ။ နားထိုင်းတဲ့ မိန်းကလေးဆီ သွားပီးတော့ တောင်းမိရက်ဖြစ်နေကရော။ နားထိုင်းတဲ့ မိန်းကလေးက။ ရက်ကန်းရက်နေသကွဲ့။ ကိရင်ကလေးကတကမကလေး။ ပုန်းရေပေးစမ်းပါ။ လုံးရာနှစ်ဆယ် ယင်းသွားပါ။ မောင်ရင်ကလေးရယ်။ တယ်ကြီးစိတ်ကြီးဝင်တဲ့ မိန်းမကြီးမျှ။ ပုန်းရေပေးတာ။ ဆုံးပေးတယ်။ ငရဲကြီးတတ်ဘယ်ဆိုပီးတော့ ပုန်းရေအိုးသွားခတ်ကရော။ ကိရင်ကလေးသွားတော့။ အမေကြီးသွားပြောရော။ အမေအမေကျောင်းက မောင်ရင်ကလေးဟာ။ ယင်းသွားဘယ်လောက်တုံးမေးပြီးတော့။ ပုန်းရေအိုးအတင်းခတ်သွားတယ်။ ဘဲနွယ်မောင်ရင်ကလေးမွန်းမသိဘူး။ ဒီလိုပြောတာကိုအမေကြီးက။ တယ်မိုက်တဲ့ သို့။ ငယ်ငယ်ရွယ်ရွယ်က။ အချိန်မရောက်သေးခင်။ လင်စကားသားစကားပြောရမလား။ နင့်အဘသွားပြောမယ်။ မိုက်အောင်။ ဒီလိုဆိုပီးတော့။ တဘက်ကလေး ကိရင်ဘတ်စီးပီးတော့။ ပြာရိုးပြာရော။ လင်အဖိုးကြီး။ ပုတ်ရက်နေရာသွားပြောရော။ မောင်မင်းမောင်မင်း။ မောင်မင်းသို့ငယ်ဟာလေ။ အကျွန်တို့ ကာလတုံးကလိမဟုတ်ဘူးမွမ်းငယ်ငယ်ကလေးတွေရှိသေးတယ်။ လင်လိုချင်တယ်လို့လာပြောတယ်။ ကောင်းရဲ့လား။ ဆုံးမနေနီ။ ပစ်ရလိမ့်မယ်။ ဒီတော့ အဖိုးကြီးကပြောတယ်။ ပုတ်ဆိုတာ ၄ ဒေါ်ငွေချသို့ပေါ့ ရှင်မရယ်။ ဆန်ကောမွှိုင်းတယ်ဟဲ့။ လူကလေး အိပ်ပလားကွယ်။ ပုံတိုတို ပြောတာတောင်။ င—သားအိပ်သွား။ ကိုင်း အိပ်တော့ အိပ်တော့။ အဘဘုရားရှိခိုးအံ့။

Nicarchus, who lived in the 1st century A.D., is the author of some 40 epigrams, some of which, commentators have thought, indicate a connection with the east. There is, at first sight, nothing oriental about the above-quoted epigram. But the Burma parallels are close, and, though there are other epigrams about deaf men in the Anthology, most of them refer to confusion between words of similar sound. This hearty specimen is almost in a class by itself.

κοινῇ παρ κλισίῃ ληθαργικὸς ἡδὲ φρενοπληξ  
 κείμενοι, ἀλλήλων νοῦσον ἀπεσκέδασαν.  
 ἐξέθορε κλίνης γὰρ ὁ πολυμήεις ὑπὸ λύσσης,  
 καὶ τὸν ἀναίσθητον παντὸς ἔτυπτε μέλους.  
 Πληγαὶ δ' ἀμφοτέροις ἐγένοντ' ἄκος, αἷς ὁ μὲν αὐγῶν  
 ἔγρετο, τὸν δ' ὕπῃ πολλὸς ἔριψε κόπος.

(Anonymous. ix. 141.)

"The lethargic man and the madman lying in a common bed cured each other's diseases. For the one sprang from the bed, made fearless by his frenzy, and beat the unconscious man in every limb. The blows proved a cure to both, as by them the sleeper was roused and the other put to sleep by his exertion."



This is rather a poor epigram. The Burma parallels are much more vigorous. The following is one I have noted :—

“Once upon a time.....halt was whole”

Once upon a time the halt and the blind were sent by their mothers to school to learn wisdom. The blind carried the halt on his back and went ahead or to right or to left as directed. When they came to the school the priest said ?

“Why come you here ?”

“We are ignorant men,” they replied, “and we have come to learn wisdom.”

“Nothing else will I teach you,” said the priest, “whatever you grasp hold it tight.

So they went away and came to a tank and the halt said.

“I am hungry. Let us eat the roots of the water-lilies. I cannot move, so set me down and I will direct you to the tank.”

So the blind set the halt down and felt his way to the tank and when he came to the water's edge he stretched out both his hands and grasped, as he thought, the roots of a water-lily. Holding light as the priest had directed, he brought it to show the halt, and said, “See friend, I have brought a lily root.”

Now the halt saw it was a snake and considered : “If I tell him he is holding a snake he will throw it down and it may fall on me. So he said, “Friend, hold it tight.”

Then the blind, holding tight with both hands lifted the snake to his mouth and it spat in his face. He blinked his eyes and again, and a third time lifted the snake to his mouth. And the venom entered his eyes and dispelled their clouds and he saw that what he held was a snake and threw it from him. It fell near the halt and fear of it put life into his dead muscles and he leapt up and ran. And from that day forth the blind man saw and the halt was whole.”

There are other epigrams on the subject of the halt and the blind in partnership ; *e g.* IX, 11, 12 and 13.

The following little Talaing poem is quite worthy to be set beside one of Meleager's, which it resembles in spirit.

ဣန္ဒြေမာတိသောတိ၊ ပါတိသေဝေ ဘိသိသတိ။ အာပိတိသေဝေ၊ ဣန္ဒြေမာတိသောတိ။  
ဣန္ဒြေမာတိ

“The little kao keh flower  
Is just about to bear fruit,  
The plant is as high as a man’s ankle.  
The winds blow and shake it.  
The cheek of my love  
Is fragrant as the kao keh flower.”

ἤδη λευκόϊον θάλλει, θάλλει δὲ φίλομβρος  
νάρκισσος, θάλλει δ’ οὐρεσίφοιτα κρίνα·  
ἤδη δ’ ἡ φιλέραστος, ἐν ἄνθεσιν ὥριμον ἄνθος,  
Ζηνοφίλα Πειθοῦς ἡδὺ τέθηλε ῥόδον.  
λειμώνες, τί μάταια κόμαις ἐπι φαιδρὰ γελᾶτε;  
ἀ γὰρ πᾶις κρέσσων ἀδυνάτων στεφάνων.

(Meleager. v. 144.)

“Now the gilliflower is in bloom, and the narcissus that loves the rain, and the lilies that straggle upon the hills. And now, loved of all lovers, a full-blown flower among flowers, blooms Zenophile, a sweet rose of the goddess Peitho. Meadows, why smile you vainly with your bright blossoms? For my lady excels sweet-scented garlands.”  
Here is Grotius’ imitation:—

Iam pluvias narcissus amans, iam lactea florent  
Montibus in summis lilia, iam violae:

Flos etiam florum maturis vernat in annis  
Zenophile, dulci plena tepore rosa.

Prata quid o vano ridetis honore comarum?  
Zenophilae par est nulla corona meae.

J. A. STEWART.

## A SHORT ACCOUNT OF TAUNGTHAS.

"Taungthas are a peculiar race found mainly in the Tilin township but occurring also north of Saw. No satisfactory theory as to their origin has yet been put forward. The only tradition universally accepted by them is that their forefathers lived on Popa hills in the Myingyan district and that they migrated thence many years ago. The first families settled near the Kyawywa creek which flows into the Myittha river just above Minywa. When their numbers increased so that enough subsistence could not be found in the settlement they determined to emigrate. The three headmen who were brothers discussed the question of the direction they should take, but the point was settled for them by the branching of a huge *nyaungbin* or *Pepul* tree, situated in the settlement. One of its branches pointed north, another east, a third south, so one brother and his followers settled in Gangaw, the second in Tilin and the third went down to Yawdwin. The tree is still pointed out. The language spoken by Taungthas is quite distinct from Burmese but is very much like Chinbok. The names of most common articles and the roots of all principal verbs are the same in both languages. The men dress like Burmans but the women, who in general physique resemble the hill Karen women of Lower Burma instead of the tamein, wear a white cotton petticoat reaching to the ankles, fastened around the waist with a belt of shells or silver wires, and a plaid shawl across their shoulders. The Taungthas are devout Buddhists but there is at the same time a good deal of nat-worship among them. They are more robustly built than Burmans as a rule and are more industrious making good cultivators. Their features are more Aryan than Mongolian in type. They are of a distinct race from both Burmans and Chins and intermarriages with these races is strictly forbidden. Courtship among them is unknown. In its stead the curious custom exists of sending once a year in the month of Tagu (April) all the young men and women of each village into the jungle. They return next morning when the rest of the village goes out to meet them with the beating of gongs and drums and each couple is considered duly married. Adultery and divorce are unknown among this primitive people. At the census of 1901 they numbered 5,701 all told". (Burma Gazetteer, Pakokku District, Volume A, page 28-29).

This is all the information that has been gathered up to date concerning this peculiar race of Taungthas. In my interviews with some of the elderly members of the race they have given me the following account of their departure from their home at Popa. They claim that they are the descendants of Tinde, the mighty blacksmith of Tagaung. Tinde was the son of Tindaw, a blacksmith at Tagaung. He was a very strong and daring man. The sound of his hammer on the anvil is said to have been heard all over the city and even shook the king's palace. The then reigning king became alarmed and ordered his arrest but Tinde evaded it and finally became an out-law. Efforts to effect his arrest failed; so the king

married his sister Saw Mai Ya and made her his queen under the title of Thiri-sanda. Tinde was more offended by this act of the king for with the Taungthas a brother had a great claim over his sisters, a trait still observed among the race. The King persuaded Saw Mai Ya to call in her brother promising to appoint him as Ein-she-min. The queen believed him and brought in Tinde who was promptly put under arrest, bound to a 'saga' tree in front of the palace and burnt to death. The faithful sister, Saw Mai Ya, leaped into the flames and died together with her brother. The brother and sister became nats, the former as Mahagiri or as known to the Taungthas Ein-she-nat and the latter as Hnamadaw-taunggyi-shin and worshiped as much by the Taungthas as well as by the Burmans. All the members of the clan became afraid of the king and left their homes for their present settlements. A reference to the Maha-yazawin shows that the king was The-la-gyaung-min who reigned from 266 to 309 B. E. So the race must have migrated some ten centuries ago. There is a nursery tale of their journey to the present settlements. They first settled at Kyaukka in Pauk township. In course of time there was not enough land to work and the Burmans desired to drive them away. They refused but it was agreed that the dispute be settled by competition in archery. It was determined that a flat stone be used as a target and whoever could thrust his arrow into the stone target was to remain at the settlement and the loser was to leave it. The Taungthas were honest and shot with an ordinary arrow which rebounded from the target on the ground. The Burmans were more cunning and shot with an arrow which was coated with bees wax and stuck to the target. The Taungthas having lost in the competition were driven out and they had to flee across the mountain range on which they hid from the pursuing Burmans, and so the name of the range is known as *Pon-taung* (ပုံတောင် = Range of Refuge) now known as *Pon-daung* ပုံတောင်. They again fled across the second range and from the top of it they gave a huge cry to find out if the Burmans were still in pursuit. This range was known as *Pon-nya* (ပုံငှာ = The Range of the Cry). When they were certain that their pursuers had gone they proceeded in their journey. This folk-lore is not believed by many and it is considered a nursery story.

As a result of the Tinde traditions the Taungthas claim with pride that they have some royal blood and they state that while Saw Mai Ya was a queen, certain privileges were conceded to the race as a mark of honour. They had the privilege of building their houses in the shape of a phaungdaw (a royal raft). As a sort of confirmation of the story it is

found that the houses of the Taungthas are all designed in the manner of a raft as illustrated below.



Another privilege is that of having steps straight in front of the house (လေ့တူးဦးတိုက်) and on the death of a Taungtha the privilege of sounding the big drum (Sidaw) and beating gongs was also granted. Until a few years ago this manner of music was, I am told, observed on the death of a Taungtha. Along with this music ballads concerning the departed could also be sung. Another legend of the origin of Taungthas which is not told by them but which I have discovered in Mahagita (Book of standard songs) is that Tinde, while roaming as an outlaw, met a *ngagama* and married her. The *nagama* laid two eggs which on the arrest of Tinde were floated down the Pon-daung and Pon-nya streams. The eggs hatched and brought forth a male and a female who became the Adam and Eve of Taungthas. This story may sound very fabulous but the mention of Pon-daung and Ponnya is a curious fact, for the present homes of the Taungthas are all in the valleys of the two ranges known as Pon-daung and Ponnya. The *nagama* might after all be a *naga* woman of the Chin hills who met Tinde while fleeing from the wrath of the King. Whatever the tradition may be as to the origin of the people it is almost a settled fact that they migrated from Popa about a thousand years ago and first settled at Chaunggu-Chayaw near the source of the Myittha river in Gangaw Subdivision. The Chinboks, the original dwellers of the place, probably resented their presence and finally they left this area, broke into parties and settled in their present homes. The Yaws also were not pleased with the new-comers and it is even now complained by the Taungthas that they were not allowed into the more fertile parts of the Yaw valley but were permitted to settle in the hilly corners near the border of the valley as a protection against the raids of the Chins. Their complaint may or may not be just but it is discovered that in the Yaw valley the Taungtha villages such as Kyi, Mi-o, Peinne, Tay, San, Hnaw, Taungdet and others are situated on the border of the Chin Hills.

## A SHORT ACCOUNT OF TAUNGTHAS.

There are two main divisions in the race known as Kokkhan and Mondon probably as a result of breaking up into parties at the time of departure from their first settlements at Chaunggu-Chayaw.

There are subdivisions under each head as follows :—

Under Kokkhan there are clans as (1) Wayat, (2) Myekhu, (3) Myesat, (4) Sanngo; under Mondon (1) Pannu, (2) Longhi, (4) Kharhanee. Some of the distinguishing characteristics of the two main divisions are that the Kokkhans can have only a white un-varnished coffin strung with 30 ropes at the burial whereas the Mondons may have a decorated coffin. The former are said to offer dogs to their nats while the latter carry out the rites with bullocks. The present day Taungthas have Burmese names but they had in former years their own Taungtha names such as Kuru, Sanngo, Yeshon, Yebyin, Kante and Minte. These names sound more like the Chinbok names and they must have been in vogue while they dwelt near Chaunggu-Chayaw with the Chinboks as their neighbours. They have undoubtedly come under the influence of the Chinboks for some of the customs such as the drinking of Khaung (known as yu) at marriage and christening and the use of bow and arrows are decidedly Chinbok. The following comparison of some common words will show their relationship.

<i>English</i>	<i>Taungtha</i>	<i>Chinbok</i>
Water	Twi	Twee
Father	Pā	Pāyo
Woman	Narā	Numi
Man	Parā	Pāmi
Race	Thathang	Puthang
Rain	Khwarā	Khū-ā
Fire	Miyai	Myai
Hill-cultivation	Law	Taung-law

The religion of the race is Buddhism but nats are still popular; there is a natsin in every village and offerings are frequently made to them. They are devout Buddhists and there are many Taungtha phongyis. They have no written language of their own; Burmese has been adopted and is taught in the phongyikyaungs. Taungthas are robustly built and generally short in stature with flat roundish faces and a nose which is rarely aquiline but more generally a more undulation of the skin. They may seem a dirty lot of people but they are well-known for their cleanliness particularly in the kitchen. They have a hospitable disposition and reserve blankets and pillows are generally kept in readiness for guests. The dress is as described in the Gazetteer quoted but many of the women especially the younger ones have adopted the Burmese 'tamein' and jacket and only the elderly retain the tribal petticoat. One marriage custom is described in the Gazetteer; there was still another custom reported to me by an old Taungtha of Mi-e village. It is said that a young man

might seize any young woman whom he considered eligible and for whom he considered himself eligible and the parents have no right to object to their pairing. Both these customs have now died out to give place to the Burmese ways but the *khaung* is still drunk at the weddings.

A marriage custom still prevails, which leads one to think that in the earlier days marriage amongst Taungthas was more of barter and bargain than of a religious or social institution. Both parties willing, a young man is allowed to give presents to his fiancée, very often these presents consist of silver and gold ornaments. Should the young man subsequently revoke his promise of marriage, he forfeits all the presents he has given; should the young woman be the guilty party, she is liable to refund to the young man double the value of the presents she had received.

As with the Burmans stone fee is assessed at Taungtha weddings. There is also another fee peculiar to the race. It is known as “*ခွေတံခွေ*”, (separation fee) a fee assessed on the bridegroom for separating the bride from the company of her fellow maidens. The assessment is made by all the maidens of the village and the amount varies with the means of the groom.

One striking characteristic of the race is the great freedom amongst the young men and young women. One often sees one or two young maidens going to a village festival or a *pwè* in the company of half a dozen young men. They roam about together in jungles; they play freely together on moon-lit nights; they watch the *pwè* together side by side, very often a young man reclining on the lap of a young woman and *vice versa*. A home which boasts of the presence of a marriageable daughter is open to all young men. The old father and mother must receive the young men; so must the daughter, but she is at liberty to retire if she finds any particular young man or party of young men uncongenial. She seldom exercises this liberty for fear of being despised as a proud and disdainful maiden. The young men spend their time chatting, smoking and occasionally teasing the young lady. This sometimes goes on till midnight. There is perfect freedom here also, no stiffness or leather-bound etiquette. Some of us may look askance at such displays of freedom but it is the freedom of the Garden of Eden. The Buddhist Dhamathats are now applied but according to their tribal laws of inheritance no female child can inherit and if a person dies leaving no male heirs the collaterals—his brothers—succeed to his estates.

The tribal customs and characteristics are gradually dying out and the race is fast becoming Burmanised. Inter-marriage with Burmans is not looked upon now with disfavour. A few years hence Taungthas will, I fear disappear as a race.

THAN TIN.



## TALAING INSCRIPTION IN A BELL CAST BY ANAUPPET-LUN MIN

TRANSLATED BY

C. O. BLAGDEN AND PE MAUNG TIN.

[Sir Arthur Phayre has a note regarding the bell: "This bell, it appears, was carried to Arakan, when a raid was made by the King of that country into Pegu, some years after the death of Mahā Dhamma rāja [Anauppet-lun Min]. In the war of 1825-26 between Burma and British India, it was found in the precincts of a temple near the old capital, and was carried to India as a trophy by a Hindu Officer of Irregular Cavalry. It now hangs in a Hindu temple in Zillah Alligarh" (p. 148, History of Burma).

The text of the inscription is in Talaing and Burmese. It was printed with a free English translation in the Journal of the Asiatic Society of Bengal, Vol. VII, April 1838 under the title "Restoration and Translation of the Inscription on the large Arracan Bell now at Nadro-highat, Zillah Alligarh, described by Captain Wroughton in the Journal of the Asiatic Society, 1837".

There are points in the Talaing text, where a study of the Burmese text does not give much help. The present translation is of the Talaing text, reproduced from the Journal mentioned above. The Burmese text also is reproduced from the same source for purposes of comparison.

The inscription says that the bell was cast in 1622 A.D. But lines 22—41 read more like a reminiscence of the fight between Wareru and Tarabya (end of 13th century) than anything recorded of Anauppet-lun Min. And do the two dates in lines 3 and 4 refer to his previous incarnations?

The system of transliteration is that commonly used by Sanskrit scholars for the transliteration of Indian alphabets, with the following exceptions. Where they write *v*, we use *w*; for the *anusvāra* (usually written *m*) we have used *ṃ* only in those cases where the sound of *m* is intended; where it is merely a shorthand way of writing an initial *a* with a *virāma* over it and represents the glottal stop, we have used an apostrophe ('); where it represents an aspirated sound we have used *h*; where it symbolizes an open *o* sound, we have used *ā*].

1. pḍai bhaddrakaw wwa' ṃ tīla mṇuṃ puin kyāk trai Kakkusan ṃ tīla mṇuṃ puin kyāk trai Konāguṃ ṃ tīla mṇuṃ puin kyāk trai Kassa -

2. pa ṃ suṃ sāsanaṃ kli lon ā nibbān tuai ṃ tīla mṇuṃ puin kyāk trai mhāra Gotāma ṃ ma ktuiw dah ṃ



## TALAING TEXT.

3. nū snām tīla mnum puin kyāk trai mnāra<sup>1</sup> Gotama t ma pari-nibbān tuai sāsana 1275 sām<sup>2</sup> kali lon ā :

4. pđai sāsana 1913 gah smiñ<sup>3</sup> mwai ma ktuiw dah ma pa tala mahatejagun : nwam kuiw kwat lñat ma hwa' dah.

5. pđen pđah canah na alew pđai<sup>4</sup> jaku kuiw : suiñ puin ma nwam nān : dađ kuiw hwa' dah kuiw mnum kuiw<sup>5</sup> acañ akhrañ

6. mnum kuiw pawī bwuiñ : satti bala manā phcuip<sup>6</sup> ma nwam pđai tala ñah ma smah kuiw woñsa<sup>7</sup> : smik gwa' balah bhawa-

7. satta' : mnum mettā ma kuiw dān kuiw ñah bwai dhaw : ma chuik bdak pđai<sup>4</sup> đik pan : mahatthā Dasa bañā<sup>8</sup> :

8. ma chuik bdak pđai tala ñah : malawara dhaw ma tim ma lep ma plop jrahān ku ñah : do<sup>9</sup> Bañā

9. ma chuik padak<sup>10</sup> pđai pa luip pum<sup>11</sup> ñah : đun ma đuik peñ tau mnum jrahāt ma sun : ma twah gah dasabala :

10. ñāñabala : kāyabala : tejabala : sutabala : dasabala ma twah gah ma đuik peñ tau dra-

11. p rat thapah prakā : ñāñabala ma twah gah smiñ ekarāt ma đuik peñ tau patibhān

12. nān ma prah : kāyabala : ma twah gah<sup>12</sup> kwat tai cah dacām sāk : tejabala : ma twah gah ma đuik peñ

13. tau amāt thakuip pñān trijah dhayah ma nwam : gluiñ : sutabala : ma twah gah jrahāt pañā.

14. uit suiñ ma tim bwaw gun : payuiw rah kwān samat kuiw : bañā tala ñah đot tala ñah Bago

15. ptit : pa huit cuit ma yon : dhaget ma blah pđai rājāwat : smiñ Pran ma dah de' tala ñah

16. Rissa dugambha : ma pa sī phuiw gwa' pa hā : suiñ agāwara ite hwa' pa manasī tara<sup>13</sup> kuiw smiñ ta kuip

17. pñān Dussidat ga gwa' lhe' lhan nā pa buiw labah kuiw ceh cuip tala Mru Pran : wā tala ñah ma

1 Read mhāra 2 For snām 3 For smiñ 4 For pđai 5 Read kuiw.

6 Read mañā bcuip 7 Better warpsa 8 Read Pañā 9 For dah 10 Read padak 11 Read phum 12 For gah. 13 Read manasikāra.

18. tau ro ॥ de' tala ñah Adaniñ payaw tau hā ॥ de' tala ñah Yān  
cesika ma tim hā ॥ wa-

19. w ॥ labāt ॥ ta luai ॥ lapah pan kwān wwa' dassamona tathā ma ca  
heñ ॥ smiñ mat Bhada ॥

20. ca thān Koliya ñah bā wwa' tau lapāt<sup>14</sup> jwi ॥ pa huit phatau<sup>15</sup>  
satta' ket thaw sran pđai

21. kon đun kon kwān tuai ca hwa' pñat dah sabhaṅga dah duik ā  
tun ॥ ॥ ॥

22. Krau gwa'<sup>16</sup> nū kuiw đun Ketuwatī Bakām gah ॥ salah ket lwah  
palah preñ sagatabyuhā

23. tuai ditthī naksat khuīh yatrākāla ma dah buiw labah ma tup  
kuiw cuit ॥ jak ceh

24. nū đun Ketuwatī Makām<sup>17</sup> te' ra ॥ gatu cai pi cwek tñai añā suim  
buiw pnān dah kharā 15 tñai ā cuip bduip

25. pnān tuik ॥ pnān ciñ ॥ pnān khyeh ॥ pnān kwī sarāai lakhak buiw  
labah suim caturaṅga ॥ jak ceh cui-

26. p bduip alām rāai tññ khon ॥ thān srī Hamsāwatī phyeḥ dap tuai  
tan māñ ra ॥ smiñ ekarat đu-

27. ñ srīhamsāwatī plan ॥ suim caturaṅka caṇah ket tuai đun phatuik  
pnān ॥ ñah ma jak kluñ ॥ gah

28. hwa' māñ tuai kalo' lik kuiw smiñ đun Mattama ra ॥ kuiw kluñ  
ruim pnān ñi ॥ smiñ Mattama miñ tuai

29. suim buiw labah ciñ khyeh tuik kwī preñ ñi sā tap stah tuai jak  
klo' ā đun srī Hamsāwatī ma ā

30. cuip ra ॥ smiñ ekarāt plan đuik ciñ thān kuin Erāwuñ tuai ॥ buiw  
ciñ khyeh ॥ kwī sarā ai la

31. khak ॥ suim pañot pnōw phatuik pnān lapāt ñah te' ra ॥ dap  
suim ase ahān

32. pek luiñ uit ra ॥ ॥ jaku tala ñah suim dap dadah ma kñā kluñ  
cuip suim amāt seṇāpati

33. takuip pnān dau bañā buiw labah kluñ ruim tuai ॥ ma gwa' jnah  
pnān ñah te' ra ॥ ॥ ॥

14 For lapāk

15 phatau screams an error for pat

16 Read wwa'

17 Read Bakām.

34. pḍai gah smiñ sṛī Hamsāwatī plan ṛ khyap gacuit smiñ Mattama ṛ ma jak tit suiṃ buiw labah bwai ma gluiñ ṛ

35. smiñ Mattama ṛ nāt buiw labah bwai ma gluiñ tuai ma tim cut<sup>18</sup> ra ṛ suiṃ kuiw buiw labah a<sup>19</sup> kluñ ruiṃ pñan<sup>20</sup> roñ

36. Imuh gruih gacuit ai plan gah tuai ṛ khāra ai gwa' yuik duik sāsanā pḍai ḍuñ wwa' plan ra yaw sdah ṛ

37. sattu pan duih dacāṃ duih gruih pa kuiw mān ṛ kuiw ai sgo' jñah ñi ṛ sāk wwa' pahadithān<sup>21</sup> tuai tala ñah

38. tuin ḍuik ciñ thān kuiṃ<sup>22</sup> Erawuin yuiy<sup>23</sup> ket ṛ pñan ciñ khyeh' tuik kwī suiṃ buiw labah jak sra lup

39. ā dow pñan ñah ra ṛ smiñ bā pñow caturaṅga pḍai gah drañ uposatha kaw ā hwa' gāñ kalēñ dwa' ṛ

40. ciñ khyeh' tuik kwī sarāai lakhak hwa' gāñ ḍuñ pek dau ā ra ṛ tala ñah smiñ Mattama ṛ ma gwa' jñah

41. tuai lau pham kharā ma kali gwa' Sṛī Hamsāwatī ṛ mnuṃ kuiw dhanī pan ma twa' gah rājādhani ṛ bijjadhani ṛ rattadhani ṛ

42. yogadhani ṛ pñow dhanī pan rājādhani ma twah gah tñow smiñ ma prai nwaṃ kuiw idhibala<sup>24</sup> ṛ bijjadhani ṛ

43. ma twah gah kwat lot kwat tai dhayah tah bwai ma gluiñ ṛ rattadhani ṛ ma twah gah drap rat thaw

44. sran mnik buit blai bgai sin lhā . bwai ma gluiñ nwaṃ tau ṛ yogadhani ṛ ma twah gah sarāai khuiñ tai gāñ slah lamyuiñ<sup>25</sup> gā-

45. ñ skāt nwaṃ bwai ma gluiñ ṛ ma ḍuik peñ tau kuiw dhanī pan ma gwa' jñah ket tuai sattu tama ṛ ma twah ñah pāai pah

46. tah lah kle' tuai ṛ pḍai drap ma ha gwa' dah bwai dhaw puiai tit huiṃ kuiw tala ñah ñi ṛ tha kuip pñan ṛ amat<sup>26</sup> se-

47. nāpati ta' sgah tuai ṛ drap cetiya santaka ṛ dhamma santaka ṛ samghasantaka ṛ ma tup tau rau

48. pamat lña ḍāai ḍāai kuiṃ ṛ ptiṃ tala ñah tuai ṛ pāai kle' thān jñoi nū ḍuñ kuiw ā tho' ke<sup>27</sup> ra ṛ

49. pḍai sat ṛ ma nwaṃ cuit ma kuiw sgo' nāt yah tamah lukau kaw sāk gah law cuit tuai ṛ pḍai ma kuiw

18 Probably for cui

19 For ai

20 For phñn

21 Pāli adhiṭṭhāna

22 For kuin.

23 Read yuik

24 Pāli iddhibala.

25 Read lamyuiṃ.

26 For amāt.

27 Read kle'.

## TALAING TEXT.

50. snow kuiw ku sat gamluiñ gah ñññ smin yuiñ ma ptuai snow  
bwa dhaw<sup>28</sup> lut dah ma thuik kuiw pa ñ pðai ke-

51. ñ kã galan ketca uit suiñ ñ amāt ñ thakuip pnān ñ dau bañā ñ buiw  
labah sarāai lakhak

52. uit suiñ ññ sã stap stah tuai gho sārada ññ smin gatu ma tuin  
yah tamah māñkrā sa-

53. moñ snāñ naksat kuiñ ñ pa sjuin sabhau kuiw satta' ññ inuh law  
cuit tuai ñ duñ

54. sjuin satta' ñ mmuñ lak kuit gwa' wet kle' uit tuai ñ mañ mwai  
law dhaw cah pa tau law dhaw me-

55. ttā cuit pðai satta' ñ wet phaton sarap phaḍap lmeñ dhaw smin  
tamlā hwa' gwa' blah hwa' weñ pāai ñ

56. lukau kālā ma la' ñ gwa' pkañ rañ duñ sri Hamsāwatī tuiñ kwet  
smin tamlā ñ hwa' gwa' blah

57. taget casuiñ māñ tau ra ñ ñ nwañ payāñ mwai tñai gho sārada-  
utu dmañ tau ltū snā paso-

58. k<sup>29</sup> cuit ma cuin skuiñ ma jip klip pðai dhaw bwai ma lon heñ ñ  
pðai duñ Sri Hamsāwatī wwa' gwa' pa cnañ

59. kyāk trai srah patau law cuit ñ yañ pawa ma nwa<sup>30</sup> kuiw bwai  
dhaw ai law cuit ra ñ ai so<sup>31</sup> khañam kuiw

60. snow la it satta' gamluiñ cuit gwa' lhai lah ñ satta' ma hwa' gwa'  
phek gmak ñ ai kuiw

61. dhaw sati ññ ñ kuiw gwa' thget snow hwa' mik kuiw blah snow ñ  
khañin mwai ai sron

62. ai kwak law dow tñā kat ra ñ yañ bwai dhaw hwa' moai kuiw  
snow ñ ptuai snow pðai

63. satta' tuai ñ tak khañin kuiw ptiñ ñ yāñ min khañin tuai snow  
bwai dhaw ai ptuai kuiw kusa-

64. tta' ra ñ sāk wwa' tala ññ nwañ dno<sup>32</sup> tuai ñ suiñ ññ mnuñ  
sran s-ahmnuñ bnat luiñ pasā ñ ñ

65. Sakkarāt 984 phallaguñña sñwatchaw gatu mrekkasuiw pðai 12  
manak tñai can ñ

28 Read snow ba bwai dhaw.

29 Read pasek.

30 Read nwañ.

31 Probably for son.

32 Read gnop.

66. bhaddrā ditthī ṃ lak dhanu ṃ payāṃ tñai tuin tuai pi nāḍi bā  
pāt triyañ brabati <sup>33</sup> ṃ nawañ bu -

67. ddhawā ṃ pḍai akhā gah tala ñah kuiw son khaññ mwai lyuiñ 8254  
[ticals] tuai kuiw kwak law dow tñā

68. klat ra ṃ nū tawuiw ma kwak khaññ yāṃ satta' ma ha gwa' glañ  
snow babwai dhaw khā tuik khaññ .

69. santiṃ ṃ baru khaññ tala ñah gwa' miñ ṃ tala ñah gwa' pa tuai  
kuiw kuiw snow bwai dhaw kuiw ku sat -

70. ta' gamluin ṃ pa tadhuiw nū gah satta' dah ā khanap la - it san  
ra ṃ satta' dah lāñ cuit

71. uit ra ṃ pḍai tala ñah sron law khaññ gah ṃ smiñ ekarāt ma pkañ  
rañ duñ Sri

72. Haṃsāwatī bwai krau khaññ wwa' luiṃ lāk sgut pruiw ā dah tuai ṃ  
ran kuiw da tuai mramow ku sat -

73. ta' gamluin gah ṃ kuiw la huit khaṇaṃ prupreñ law ñi ṃ phuiw  
ai ma khaṇaṃ law khaññ ma pa tuai

74. snow kuiw satta' dah pmik ṃ bwai anāgat nibbāna desasanthān  
kuiw gwa cau tan

75. mañ ñi ṃ la' gwa' nibbān jmāp jmāp bhawa ruih ruih ma pa tuai  
snow gah ṃ kuiw dah bwai dhaw kuiw

76. gwa' pa tuai snow bwa dhaw ñi ṃ huin ai sgo' pa tuai snow  
tuai ra ṃ

---

33 Read brau bati.

## BURMESE TEXT.

ဘက္ကမ္ဘာထက်နှိုက်ပွင့်တော်မူသော ဘုန်းတော်ကြီးသောဘုရားမြတ်စွာကောက္ကသန်။ ဘုန်းတော်ကြီး  
သောဘုရားမြတ်စွာဂေါ်နာဂုန်။ ဘုန်းတော်ကြီးသော ဘုရားမြတ်စွာကသပ။ သာသနာတော်နှင့်တကွပရိနိဗ္ဗာန်  
စံလွန်တော်မူပြီးသည့်နောက်။ ဘုန်းတော်ကြီးသောဘုရားမြတ်စွာ မဟာရဂေါတမပွင့်တော်မူသည်။ ဘုရားမြတ်စွာ  
မဟာရဂေါတမ ပရိနိဗ္ဗာန် စံလွန်တော်မူပြီးသည့်နောက်။ သာသနာတော် ၁၂၇၅ နှစ်လွန်သည်။ သာသနာတော်  
၁၉၁၃ ခုနှစ်တွင်။ သမ္ဘာနှင့်ပြည့်စုံသည့်မင်းဖြစ်တော်မူသည်။ အထာရသအတတ်ပညာလည်းမသင်ကြားမိမိအလို  
လိုတပ်ခြင်း။ ညာဏ်ပတ်ဘန်ဥစ္စာနှင့်ပြည့်စုံခြင်း။ သင့်သည်မသင့်သည်ကိုလည်းဆင်ချင်နိုင်ရှည်ခြင်း။ သတ္တိမလနှင့်  
ပြည့်စုံခြင်း။ အခြေအရန်ဆွေမျိုးတို့နှင့်ပြည့်စုံခြင်း။ တိုင်းသူပြည်သားတို့ဆင်ရဲဒုက္ခကိုကယ်ဆယ်ခြင်းနှင့် မေတ္တာ  
ပွားများ၍မစခြင်း။ အမတ်ကြီးလေးပါးတို့ကိုလည်း အခွင့်ပေးချင်း။ အသမညာအမတ်ကိုလည်းအခွင့်ပေးခြင်း။ မလတ  
ရတရားဆိုရာမှာ—သုတထူးတို့ကိုချစ်ခြင်းမေတ္တာပွားများလျက် လူ့ဒါနစွန့်ကျယ်ခြင်း။ တိုင်းသူပြည်သားတို့ကို အ  
ကျိုးစီးပွားများစေခြင်း။ ဒေသျှညာဆိုရာမှာ။ မင်းအေကရာဇ်အဘိသိတ်သွန်ခြင်း။ မြို့အား ၅ ပါးဆိုရာမှာ—ဒသမလ  
—ညာဏမလ—ကာယမလ—တေဇမလ—သုတမလ။ ထိုမလ ၅ ပါးဆိုရာ၌ ဒသမလသည် ခွေငွေ ကျော်သံ ဘက္က  
များနှင့်ပြည့်စုံပေးခြင်း။ ညာဏမလဆိုရာမှိုက်မင်းအေကရာဇ် ဘုန်းအာဏာပညာတက်မြန်ပြည့်စုံခြင်း။ ကာ  
ယမလဆိုရာမှိုက်အထာရသ ၁၈ ပါးသောအတတ်နှင့်ပြည့်စုံသည်။ သူရဲသူခက်တို့ပေါ်များခြင်း။ တေဇမလဆိုရာ  
၌အမတ်စစ်သူကြီးတို့ညာဏ်ပညာနှင့်ပြည့်စုံခြင်း။ သုတမလဆိုရာ၌မြို့ရွာနယ်အပိုင်အခြားသိကျွန်သည်ညာဏ်  
ပညာနှင့်ရှိသူပေါ်များခြင်း။ ညီတောမုညာယောကို မြို့ကနှင့်ထုတ်သည် အကြောင်းမှာ။ မင်းတို့၏ကြရာဝတ်နှင့်  
မညီ။ ညီတော်ပြည်မင်းရှိသဒုဂမ္ဘကို နှစ်ဖြင့်ကြားလွန်ပြောဆို၏။ မိမိသည်အမတ်စစ်သူကြီးတို့ကိုအရိအသေ  
သဂ်ရဝမပြုသောကြောင့်။ ဒုသိဒိတ်စစ်သူကြီးသည် ဗိုလ်လူအများတို့ကို လှည့်ဖြာ၍ ပြည်မြို့စားထံ ဝင်စားသွား  
လေ၏။ မင်းဧကရာဇ်သည် မည်သည်မှာရှိသည်။ ညီတော်အခန့်သည်မည်သည်မှာရှိသည်။ ဝေါ—လဘတ်—တလ  
ဝါ—လဘာ—လေရာဒသမောနတထာစားသည်။ မတ်အဒစမင်းမှာကေးလိယကိုစားသည်။ ထိုသူ ၂ ယောက်မှာ  
လက်ဝဲအမတ် ဖြစ်သည်။ ထိုသူ ၂ ယောက်တို့သည် မြို့နေရွာစားတို့ကို ညှဉ်ပန်နှိပ်စက် ကြေငွေကိုယူ၍ မစား  
ထိုက်သောကြောင့်။ ဆင်ရဲပြန်ခြေသည်။ ကေတုဝတီပုဂံမြို့ကစစ်အင်္ဂါ ၄ ပါးနှင့်တကွ ဒိဗ္ဗိကွတ်နေကောင်း  
ရက်သာအခါနှိုက်။ ဗိုလ်ခြေဆင်မြင်နှင့်တန်ခူးလပြည့်ကျော် ၃ ရက်အင်္ဂါနေ့ ကေတုဝတီပုဂံမြို့ကချီးထွက်လာ၍  
၁၅ ရက်နေ့နှင့်ရော်လာသည်။ ထိုအခါ သီရိဟံသာဝတီမြို့မှာ တပ်စခန်ချနေရာ။ ထိုအခါ—သီရိဟံသာဝတီမင်း  
ဧကရာဇ်လည်း စတုရင်္ဂစစ်အင်္ဂါလေးပါးကို ပြင်ဆင်ပြီးလျှင် ချီလာသည်စစ်ကို ဆီးကျိုး၍တိုက်ရာစစ်ညှိသော  
ကြောင့်မုတ္တမမင်းကိုစစ်ကူမည်အကြောင်းစာပေးလျှင် မုတ္တမမင်းကကြား၍ဗိုလ်ချေးအများ ဆင်တပ်မြင်းတပ်—  
အမတ်စစ်သူကြီး သူရဲသူခက်အလုန် အရင်းတညီတညွတ်တချက်ထည် မုတ္တမကချီလာ၍ သီရိဟံသာဝတီမြို့ကို  
ရော်၏။ မုတ္တမမင်းလည်း ရောဝံဆင်ကိုစီးပြီးလျှင် ဗိုလ်ချေဆင်မြင်သူရဲသူခက်အလုံးအရင်းနှင့် ခုခံကူညီတိုက်ရာ။  
ကေတုဝတီပုဂံမြို့ကစစ်သည်တို့ မခံမရပ်—မခံနိုင်၍ဗိုလ်ချေတပ် အလုံးအရင်းနှင့်ဆုတ်ခွါသွားကြလေ၏။ မုတ္တမမင်း  
မှူးမတ်စစ်သူကြီးရဲမက်တို့နှင့် ကူညီလာသည်ကို သီရိဟံသာဝတီမင်းက—မုတ္တမမင်းကိုသတ်မည်ကြံ၍ဗိုလ်ချေနှင့်  
တကွမင်းကြီးလည်း ဥပေါသထဆင်ကိုစီးပြီးလျှင်ထွက်လာ၏။ မုတ္တမမင်းကချီးထွက်လာသည့်စစ်ကိုမြင်လျှင်သူ  
ရဲသူကိုအောဗိုလ်ချေနှင့်ကူညီတိုက်ဖျက်သည်။ အောသတ်မည်ကြံပြန်သည်။ ကျေးဇူးကိုမသိ။ သည်တိုင်ပြည်မှာ။  
ငါသည်သာသနာဒါယကာဖြစ်ရမည်မှန်လျှင် ယခုချီလာသည့်ရန်သူလေမျက်နှာ ရှစ်မျက်နှာတို့ကိုအောချီးမဲ့နိုင်  
ပါစေသာဟုသစ္စာမိဋ္ဌာန်ပြုပြီးလျှင် မုတ္တမမင်းလည်းဧရာဝတီဆင်ထက်သို့တက်၍ ဗိုလ်ချေဆင်လုံးမြင်းရင်းနှင့်တကွ  
ပြုပြင်သည့် မင်းဧကရာဇ် ၂ ပါးဆံ၍စစ်ထိုးကြရာ—သီရိဟံသာဝတီမင်းစီးသည့်ဥပေါသထဆင်ကိုထိုးမိ၍ အစွယ်  
ကျိုးလျှင်ဧကရာဇ်မင်းကိုပြန်လန်၍မခုခံဝန်သောကြောင့်။ ဗိုလ်ချေဆင်လုံးမြင်းရင်းနှင့်တကွပုဂံစီးလေ၏။ မုတ္တမ  
မင်းလည်းအောင်စည်ကိုတီးပြီးလျှင်ထာဏီ ၄ ပါးနှင့်ပြည့်စုံသောသီရိဟံသာဝတီမြို့ကိုသိမ်းယူလေ၏။ ထာဏီ ၄  
ပါးဆိုရာမှာ။ ရာဇထာဏီ၊ ဗိဇ္ဇထာဏီ၊ ရက္ခထာဏီ၊ ယောဂထာဏီ၊ ထိုထာဏီ ၄ ပါး၌ရာဇထာဏီဆိုရာမှာမြတ်  
သောမင်းမျိုးဘုန်းတံခိုးနှင့်ပြည့်စုံခြင်း။ ဗိဇ္ဇထာဏီဆိုရာမှာ—အတတ်ပညာနှင့် ပြည့်စုံသူပေါ်များခြင်း။ ရက္ခထာ  
ဏီဆိုရာမှာ—ရတနာ ၇ ပါးပေါ်များပြည့်စုံခြင်း။ ယောဂထာဏီဆိုရာမှာ—အသက်ကိုစွန့်သည် သူရဲသူခက်ပေါ်

များခြင်း။ ထာကီ ၄ ပါးနှင့်ပြည့်စုံသည့်သီရိဟံသာဝတီမြို့ကိုသိမ်းယူ၍။ မကောင်းသောသူတို့ကိုသုတ်သင်ရှင်းလင်းပြီးလျှင်ငြိမ်းဝတ်စွာစိုးအုပ်တော်မူ၏။ ။ မှူးမတ်သေနာပတိစစ်သူကြီးတို့က—သည်မြို့မှာ—မတော်မတရားရှိသည်ဘုရားပစ္စည်း—တရားပစ္စည်း—သံဃာပစ္စည်းများနှင့် စပ်ဆိုင်သည်။ ထိုသံတွေခဲပမာရှိသောမကောင်းသောဥစ္စာပစ္စည်းများကိုအဝေးမှာစွန့်ပြစ်ရအောင်—မင်းဧကရာဇ်ထံတင်လျှောက်လျှင် ထိုမကောင်းမသန်သောဥစ္စာပစ္စည်းများကိုမြို့ကအဝေးအရပ်သို့စွန့်ပြစ်လေ၏။ ။ တိုင်းသူပြည်သားတို့သည်။ တကမ္ဘာပတ်လုံးတရားသဖြင့်အလင်းဖြစ်ရအောင်—ယမကသေမင်းသက်သို့ တရားဆုံးဖြတ်ရာ မဇ္ဇိမကွက်ထိုက်သက်သည်ကိုနှစ်လုံးထားပြီးလျှင်—တိုင်းသူပြည်သားမှူးမတ်စစ်သူကြီးရဲမက်တို့တညီတညွတ်ရှိပြီးမှ—လပြည့်နေ့လမင်းသည် နက္ခတ်တာရာ—ကျယ်အပေါင်းခြံရံလျက်တောက်ထွန်းဘိသကဲ့သို့ သိန်းသန်းမကသောတိုင်သူပြည်သားတို့အကျိုး စီးပွားကိုဆောင်လိုသောငှါ။ မင်းကွင့်တရားဆယ်ပါးနှင့်ညီသဖြင့် မေတ္တာစိတ်ကိုပွားများလျက် တိုင်သူပြည်သားတို့ကိုဆုမွန်သွန်းသင်၍ရှေးမင်းတို့ကွင့်ထုံးကွင့်နည်းအတိုင်းမမှားမရှင်းစေရ။ ကာလအရှည်သီရိဟံသာဝတီမြို့ကိုစိုးစံတော်မူသည်။ ။ တနေ့သ၌ ဂေါသာရဒုတေသင်္ကန်းမြတ်သောအဘိသိတ်သွန်ခံသည်သလွန်တော်ပေါ်ထက်စိတ်နှလုံးကြည်လင်စွာစံနေတော်မူသောအခါ—မှန်ကံသဖြင့် တရားသောအမှုကိုစင်စား ဆင်ခြင်တော်မူသည်သီရိဟံသာဝတီမြို့တော်မှာဘုရားသွင်ကိုယ်စားတော် နှလုံးထားပြီးလျှင်တိုင်သူ ပြည် သားတို့ကို မှန်သောတရားသဖြင့်ဖြစ်စေလိုသည်လည်း တကြောင်း။ မကြောက်မရွံ့ရအောင်သတိပေးသည်လည်းတကြောင်း။ မှန်သောတရားသဖြင့်ဖြစ်ရအောင် ခေါင်းလောင်းတခုကိုသွန်းလုပ်ပြီးလျှင် လယ်ဘော်မဏ္ဍပ်မှာဆွဲထားမည်။ တိုင်သူပြည်သားတို့ကိုမတရားသောအမှုကိုစီရင်လျှင် ခေါင်းလောင်းကိုတိရမည်။ ခေါင်းလောင်းသံ ကြားတော်မူလျှင်—တိုင်သူပြည်သားတို့ကိုမှန်သောတရားသဖြင့် ဆုမွန်ပေးတော်မူမည်နှလုံးထားပြီးလျှင်—ငွေစင်ချိန်ငါးသာတထောင်ထိုက်သည့် ခေါင်းလောင်းတခုကို သွန်လုပ်စေသည်။ သက္ကရာဇ် ၉၈၄ ဖလ္လဂ္ဂန္တ သံဝစ္ဆရ နတ်တော်လွှန်း ၁၂ ရက်နေ့ တနင်္လာနေ့ ဘဒ္ဒါဒိတီ—ခနုလက်—နေတက်ဥတြာ- ၂ ပါး- ကြာသပတေးတြင် ဗုဒ္ဓဟူနဝင်—ထိုအခါ၌ ဧကရာဇ် မင်းမြတ်သည်သွန်လုပ်ထားစေသည်ခေါင်းလောင်းအချိန် ၈၂၅၄၂ ကိုလုပ်ပြီးလျှင်လယ်ဘော်မဏ္ဍပ်မှာဆွဲထားစေသည်။ ခေါင်းလောင်းသွန်လုပ်ပြီးလျှင် ဆွဲထားသည်နေ့မှစ၍ တိုင်သူပြည်သားတို့ကို မတရားသည့်အမှုကို စီရင်လျှင် ခေါင်းလောင်းကိုတိသည်။ ခေါင်းလောင်းသံကို ဧကရာဇ်မင်းမြတ်အား ကြားတော်မူလျှင်မှန်ကံသောတရားသဖြင့်ဖြစ်ဖြစ်ဆိုဆုမွန်စီရင်သည်။ တိုင်သူပြည်သားတို့လည်းစိတ်နှလုံးတွေ၍ ရေနှင့်ဆေးဘိသကဲ့သို့စင်ကျယ်သည်။ ဧကရာဇ်မင်းမြတ်သွန်လုပ်ထားသည်ခေါင်းလောင်းကိုပျက်စီးရိုရှင်းလျှင် နောင်မင်းဧကရာဇ်တို့သီရိဟံသာဝတီပြည်ကိုမင်းပြုလုပ်၍ တိုင်သူပြည်သားတို့အား မှန်သောတရားသဖြင့် ရည်စူးထောက်ထား၍ ပြုပြင်ပါ။ ကျွန်ုပ်သည်ခေါင်းလောင်းကိုသွန်လုပ်ထားရသည် တိုင်သူပြည်သားတို့ မှန်သောတရားသဖြင့် ဖြစ်ရသည်အကျိုးမှာ။ နောင်နိဗ္ဗာနအသအရပ်သို့ ရောက်ရပါစေသော။ နိဗ္ဗာန်မရမှီအကြာလည်း ဘဝတိုင်းတရားကို ဆုမွန်ရာလည်း မှန်သောတရားသဖြင့်ဆုမွန်ရပါစေသော။ ငါသည်ကုသိုလ်တရားကောင်းမြတ်သည်ကိုပြရပြီး။ ။

## TRANSLATION

1. In this auspicious cycle the lord of grace, the Exalted Buddha Kakusandha, the lord of grace, the Exalted Buddha Konāgamaṇa, the lord of grace, the Exalted Buddha Kassapa,

2. together with [their] religion having passed away [and] gone to Nirvana, the lord of grace, the Exalted Buddha Mahavira<sup>1</sup> Gotama, arose into existence.

3. From the year the lord of grace, the Exalted Buddha Mahavira Gotama achieved parinirvana, [in the era of] religion 1275 years elapsed;

4. in the [period ending with the year of the era of] religion 1913<sup>2</sup> a king arose into existence, who was lord of great majesty [and] merit, possessed of learning [and] acquirements which needed no

5. memorising [but] appeared spontaneously in himself, possessed of merit and knowledge, endowed with discrimination of what is fitting [and] what is not fitting,

6. possessed of pomp [and] retinue<sup>3</sup>, and who leads one to power [and] strength. His Majesty had compassion on living creatures, as though they were his own relatives to the end that they might be released from misery,

7. giving gifts to people according to the law; he was in intimate counsel with [his] four servants, and was well versed in the 18 great arts and sciences.

8. He knew the principle of good and evil, and endeared himself to others.

9. He was a prince<sup>4</sup> intimately acquainted with ceremonial ablution [and] initiation of others. The city was endowed with the five forces, that is to say, *dasabala*,

10. *ñāṇabala*, *kāyabala*, *tejabala*, *sutabala*:—*dasabala*, that is to say, being endowed with wealth

11. [and] gems of [the] seven kinds; *ñāṇabala*, that is to say, a royal monarch who is endowed with ready wit,

12. quick intelligence; *kāyabala*, that is to say, the eighteen sorts of handicrafts; *tejabala*, that is to say, being endowned with many

1 Apparently *Mhāra*. Else what is the *ru*? 2 The figures 1275 and 1913 as applied to a *sāsana* era seem irreconcilable. 3 *Pawī* not in Halliday. 4 i.e. *Baṇḍā*.



13. ministers, military officers of much glory [and] fame; *sutabala*, that is to say, the power of all knowledge which knows

14. a multitude of qualities, the boundaries of the realm [and] the small villages.

His Majesty, Bañā Ngè, King of Pegu<sup>1</sup>, expelled his younger brother Rissadugambha,

15. Prince of Prome<sup>2</sup>, because his mind [was] depraved [and] he committed acts of disloyalty.

16. Must he be taking bribes? With disrespect and inattention he behaved and he

17. enticed Dussidat over to his own army [and] caused him to go down to the king of the city of Prome. "Where is His Majesty now?"

18. Shall I oppress<sup>3</sup> His Majesty's younger brother Adanin? Who knows His Majesty's younger brother, Yan Cesika?" [Thus was he disloyal.]

19. Waw, Labāt, Taluai, Lapah, these four villages Dassamonatathā [it was] who 'ate' [them]. Prince Mat Bada

20. 'ate' the place Koliya. These two were [of] the left side. Because [they] oppressed the people, obtained gold [and] silver among

21. the inhabitants of towns [and] inhabitants of villages, it [gold and silver] perished; they were not worthy of it and consequently must come to misery again.

22. After this from the city of Ketuwatī Pagan,<sup>4</sup> having served out [and] taken arms [and] prepared the battle array,

23. in an auspicious *tithi* and *Naksatra*, a moment suitable for the expedition, an army of soldiers, who were like unto the mind, set out

24. from the city of Ketuwatī Pagan [in the] month Caitra, third waning, the day [being] Tuesday. After an interval of 15 days they were to reach camp.

25. An army of infantry, an army of elephants, an army of horse, an army of chariots,—together with this fourfold army, the soldiers came down [and] reached

26. camp, and put up flags [and] war banners [in] the land [of] Hansawatī. The royal monarch

---

<sup>1</sup> Bago.

<sup>2</sup> Pran.

<sup>3</sup> Payaw not in Holliday.

<sup>4</sup> Bakān.

## TALAING INSCRIPTION IN A BELL CAST BY ANAUPPET-LUN MIN.

27. of the city of Hansawati, on his part, having attacked with the fourfold army, not being able to support the onslaught of the army of the men who had come,

28. sent a letter to the king of the city of Martaban<sup>1</sup> to cause him to come and help the army. The king of Martaban, having heard of it,

29. arranged evenly, in unison, an army of elephants, horse, infantry [and] chariots and set forth to go over to the city of Sri Hansawati [and]

30. reached [it]. And the royal monarch [of Martaban] mounted the elephant Erawuin 'Lily-white', while the army of elephants, horse, chariots [and] soldiery

31. with fury assailed the enemy so that the camp and division were

32. dispersed in rout altogether. Because His Majesty himself with his forces had come up together with the ministers, generals,

33. heads of the army, leaders [and] chiefs, [and] the host and rendered assistance, the hostile army was defeated.

34. Thereupon, the king of Sri Hansawati on his part planned to kill the king of Martaban, [and] sallied forth with a very great army.

35. The king of Martaban, seeing the very great army, realized [what was happening]. "With my army I came to help;

36. now [he] plans to hurt [and] kill me in return", having said this he made an Act of Truth: "If it be so, that I shall uphold the religion again in this city,

37. may the enemies of the four quarters and the eight quarters not be able to hurt [me], let me be enabled to be victorious." And His Majesty

38. mounted the elephant Erawuin 'Lity-White', took the army of elephants, horse, infantry, chariots and the host, (and) shouting the battle-cry sallied forth [and] broke [and] entered

39. into the midst of their army. The two kings [being] in the midst of the fourfold army, at that moment a tusk of Uposatha broke [and he] did not venture to return to the charge;

40. elephants, horse, infantry, chariots [and] soldiery<sup>2</sup> did not venture to withstand but were dispersed (and) ran away. His Majesty the king of Martaban having succeeded in gaining the victory

<sup>1</sup> *Mattama*.

<sup>2</sup> Sarāai lakhak Cf. Burmese သရဲသရဲ Halliday does not register လာက

41. proclaimed [with] drum [and] trumpet that he had got Sri Hansawati which possessed the four *dhani*'s [depositories], that is to say, *rājadhanī*, *bijjadhanī*, *rattadhanī*,

42. *yogadhanī*. Amongst the four *dhani*'s, *rājadhanī* means a succession of noble kings possessed of might [and] power; *bijjadhanī*

43. means the various arts [and] crafts [and] much fame; *rattadhanī* means wealth, gold,

44. silver, rubies, diamonds, pearls, cat's [eyes], coral, existing in great quantities; *Yogadhanī* means a soldiery strong of hand, bold to devote their lives, brave

45. [and] fierce, existing in great numbers. Having conquered [the city] that was endowed with the four *dhani*'s, he swept away, levelled, cast out [and] cleared away every enemy.

46. "As to property which is not according to the Law, let us go out (and) report to His Majesty", thus the chiefs of the army, ministers

47. [and] generals said, and informed His Majesty about wealth belonging to shrines, belonging to the Law, belonging to the Clergy, which was like unto

48. a fire of redhot embers, and cast it out [to] a place, far away from the city [and] caused it to be removed.

49. As for rational beings he set his mind that they should see the light during the whole cycle, [and] in giving

50. judgments to all these beings he acted like king Yama who makes judgments according to law. As to what was proper and improper

51. in speech and act and in everything, ministers, chiefs of the army, nobles [and] princes, the army [and] soldiery,

52. all of them, were in harmony [and] agreement, even as in the autumn the moon-god rises [and] shines among the border of

53. stars [and] constellations. He made up his mind to be responsible towards, and accepted

54. the responsibility for the, people. There were ten thousand [and] hundred thousand of people [that he] disciplined altogether; [he] observed the ten *dhammas*<sup>1</sup>, established the law of

55. loving-kindness among the people, admonished [and] instructed them, bringing them nearer according to the law of the kings of old, [that they] could not escape or avoid [it].

<sup>1</sup> i.e., duties of a king

## TALAING INSCRIPTION IN A BELL CAST BY ANAUPPET-LUN MIN.

56. during a long period [he] was able to rule the city of Sri Hansawati in accordance with the custom of the kings of old, he did not evade it;

57. but abided in its observance.

There was a time, one day, in the autumn season, (he) was upon the couch of enthronement,

58. with a heart very completely disposed to the Law. "In this city of Sri Hansawati to do (duty as) a substitute (for)

59. the Exalted Buddha let (me) set up. An Act according to the Law have I set my heart upon. Let me be able to make (and) give

60. judgments (for) all mankind; let their minds be broad, that the people may not fear (and) be afraid; let me give them

61. a principle of remembrance, causing (them) to be able to observe judgments (and) not desire to evade judgments; I (will) cast a bell,

62. I (will) hang (it in) the middle of the Court hall: If a judgment be given not according to law

63. to the people, let them strike the bell (and) give information. When (I) have heard the bell, I will give judgment according to law

64. to the people" This did His Majesty desire. For the value of pure silver amounting to a weight of one thousand viss,

65. (in) Sakkarat 983, a Phalguna year, (in) the month Mirgasiras on the 12th [of the] waxing [half], the day [being] Monday,

66. in the Bhaddra *thiti*, the *lagna* being Sagittarius, the time sun risen thrice *nādi* two *pād*, *trīyaṇ* of Jupiter, *nawāṇ* of Mercury,

67. at the time His Majesty having caused the casting of a bell of the weight of 8254 ticals, caused it to be hung up in the middle of the Court

68. hall. From the time of the hanging of the bell, if persons did not obtain the path of judgment according to the law, they had to strike the bell

69. of reminder. His Majesty, being able to hear the sound of the bell, was enabled to give judgment according to law to all

70. the people. From that time forth, the people could get all their heart's desire, the people got their minds cleansed

71. altogether by His Majesty casting this bell. Let the royal monarchs ruling the city of Sri

72. Hansawati hereafter, (if) this bell (should be) destroyed, perish (or) wear out, having (due) regard to the benefit (and) advantage for all

73. the people, cause (it) to be renovated, made (and) prepared. Let the merit of my making the bell, of making

74. judgments for the people according to (their) wishes, (be that) in the future (I) may return to the state of Nirvana (and)

75. dwell (there) permanently ! (In the) long time of attaining to Nirvana, (in) each several existence let justice be done according to law, let (me)

76. succeed in doing justice according to law. I have succeeded in doing justice.

## MEDIEVAL BURMESE COURTSHIP.

Courtship is indubitably a fine art assiduously cultivated by the youth of all ages and of all climes the world over where there are no restrictions to a free social intercourse between the sexes and where free movement of the fair sex is countenanced; and Burma is no exception to the social custom treated of in this paper.

The women of Burma have, from time immemorial, enjoyed all the rights of men in matters legal, social and domestic; men cannot claim a superior right over the opposite sex in any respect whatever. Marriage, divorce, incidents of marriage and divorce such as settlement of property, division of property on divorce, inheritance and all other questions of a domestic character, are contracted, settled and decided on an equal footing between the sexes. Although marriages may be dissolved as easily as they are contracted, yet divorces among the higher and middle classes are practically unknown; and there has never yet been a necessity to establish divorce courts apart from the ordinary courts of law.

Courtship is but a preliminary to matrimonial wedlock and was, till three or four decades ago, regarded in Burma as solemn a matter as the marriage itself although it lost none of its lighter and romantic side.

For the purpose of this article I shall arbitrarily place the pre-Alaungphra period as the ancient time, his line of dynasty as the middle ages, and the dawn of this century as, not the modern time, but simply "the renaissance," a transitional period from the middle ages to the modern time. Therefore the title of this paper should be clearly understood to mean the social customs prevailing during the middle ages and prior to the renaissance of this country alone.

"Old customs die hard" is a truism applicable to matters other than courtship in Burma; and it is greatly to be regretted that this domestic custom of the Burmese should have met with a fate of fleeting disappearance as complete as it could be. The young men of the modern type, who have never heard of the manner of courtship in the middle ages, will be quite sceptical as to the truth of what is written here as they will feel as if they are reading a fiction or a fable. On the other hand the tremendous changes political, economic and social that have taken place within so short a time as 30 or 40 years, the crass ignorance about the native religion (Buddhism), the waning authority of the elders and the Buddhist monks, and a thousand and one other things, would hardly be believed by those ancients who lived in the middle ages, were they to come to life again.

The Burmese Buddhist Law of Marriage, Divorce and Inheritance is believed to have been built on the usage and customs of the people;

and the minimum age limit, viz :—20 years, prescribed therein for the attainment of the age of majority and therefore for the marriage of young men and women, is in agreeable consonance with their usage and custom. I shall now transport my reader to that past which is not remote, but has just gone by, and shall ask him to play the part of a silent witness to the court paid by the youth of that age.

During the middle ages a young man would enter into novicehood of the Buddhist clergy as soon after attainment of puberty as possible, as has been the religious custom of the people from time immemorial, and would stay in a cloister for at least one lent extending to four months, learning arithmetic, the Pali grammar and the Buddhist psychology, and receiving at that impressionable age the best of training, under the head monk of the monastery into which he entered.

On leaving the cloister, generally after two or three years of his novicehood his status as a "young man" would be recognised, and he would be numbered as one, a fellow, an associate, a *kalatha*, among the older "young men" or *Kalathas*. Both custom and his youthful inclinations would then dictate to him the necessity of finding a life partner a few years thence, and his associates also would prompt him and suggest to him to pay his court to a young damsel of his age whose social standing was equal to his. From amongst the number of young women he would choose one who, in his opinion, would suit him as a life partner. He would then express his wish to his *kalatha* friends to pay his court to the damsel of his choice; and the leader or captain called *kalathagaung* (head of the young men) of the unorganised association of the town or village would then approach the mother, elder married sister, aunt or an intimate friend of the damsel with a proposal to permit the young recruit to pay his court to the young woman selected by him as his future or prospective life partner.

The young woman's party would then hold a conference and give their assent or dissent as the case might be. Were the answer favourable a short date was fixed for the young man to pay his first visit. On the appointed day the young man's party, comprising two or three of his chums headed by their leader, would announce their coming; and on a "line clear" signal having been given intimating that the father had gone to sleep and that the brothers and the other male members of the family had been sent away on some pretext or other, the party would enter the house, the young man dressing in the best silk *paso* newly bought by his father after he had left the cloister and with a *gaungbaung* (head dress) wrapped helter skelter round his head which had just grown enough hair, not yet longer than half a cubit, as he had not been able to tie his *gaungbaung* in the orthodox and accepted fashion.

The shyness exhibited by the young man on this first visit, when he was initiated into the dreaded but coveted mystery of paying courtship,

is indescribable and surpasses that of the young woman. He would actually be trembling all over. The old mother or the elder sister present at the place of reception, seeing the plight of the young man, would come to the rescue by inviting the party to partake of the pickled tea and the contents of the betel box; and the leader would speak on topical subjects of the day or mere nothings in order to divert the gaze or attention of the reception party. Thus the first night visit was spent with talks on most ordinary subjects, and the object of the visit was not broached.

On the next visit the leader, whose duty it was to bring about the first introduction only, would leave the young man and his chums to the mercy of the host party; but they would return home before midnight after talking on topical subjects and nothing else.

On the third night of visit, only one chum would accompany the young man as the latter is deemed to have by this time knocked off the best part of his shyness. He would break silence observed on previous visits, and join in the general conversation carried on between the host party and his chum.

After the young man had made himself quite familiar with the house party, his chum would no longer accompany him, and he would be left to shift for himself.

The sleeping time is the time invariably chosen for his nocturnal visits. In some cases as much as one long month would elapse before the young man was courageous enough to speak to the damsel; in other cases it took much longer. In only very few instances was the young man courageous enough to speak to the young woman within a few days of the first introduction. Those were the days when quick locomotion was not dreamt of, and the people took everything including the matter of courtship quite easy, and executed their vocational work with such procrastination as would never be tolerated by the impatient and active young men of the modern times.

Now we have come to that stage when the young man could, by pre-arrangement with the aunt or elder married sister of his as-yet-unacknowledged sweetheart, appoint a day when he might visit the house emptied of the male members of the family as it was only then that he might freely converse with the damsel. Such a day would be fixed when the young man would visit with the lightest spirit.

On the arrival of the young man, the mother, aunt or elder married sister would remain at a respectable distance in order to permit the young people to converse more freely between themselves; but custom forbade that he should speak in a very low tone or of love itself. The young



man's honest intentions and object of his frequent visits are things accepted and understood; and no declaration of love seemed to be a *sine qua non*. He was expected to speak and to behave as befitting the son of respectable parents (Mi-tha : hpa-tha : pyi-byi saga : pyaw ya thi). Each expects the other to be a paragon of virtue.

However after a courtship of a year or two in the fashion related above, a time would come when a declaration of love became a desideratum as such declaration would mark the end of the period of probation during which the young man had carefully watched the mentality, character, conduct, tendencies, predilections, prejudices and other qualities, good or bad of the damsel and *vice versa*. Either the young man or the young woman could break off at any time if one thought that the other would not prove to be a suitable spouse after the marriage. If on the other hand the young man had approved of the damsel, he would make a declaration of his ardent love. It was open to the damsel even at that stage to either accept or reject the suit. If the proposal was accepted by the damsel, then the young man would be the happiest person in the world; and he would then fix a year or two thence for the intended marriage.

It may be noted that elopement was entirely unknown; and a breach of promise to marry committed by the young man was viewed as a very serious crime, and would not be pardoned by the whole circle of the young man's friends and relatives throughout his life though no legal action was ever taken on such "crimes." Such was the state of strong public opinion in those days. Women of Burma in those days (and many of them even now) took a great pride in applying to themselves the epithet "တစ်ယောက်တည်း" (one and the same lover and husband).

During the days of probation for a year or two at the outside, the young man would visit the house at short intervals when he could meet his sweetheart during the absence of the male members of the house, but invariably in the presence of the female members.

The meeting must always be in the guest room and nowhere else. In those days houses were built after the fashion of the present day Talaing or Mon houses, that is to say, the front part of the house had only the lower or ground floor covering the front part of the house while the upper or raised floor covered the back part of the house.

It was during the days of the probationary period of courtship that the young man had spent the happiest part of his life. The young man had always remained and sat not far from the stairs in the guest room at a spot where a fine mat would be spread, divided from his *fiancée* by a betel box, a saucer with pickled tea, a small plate filled with cigars and an earthen vessel, called "LAMP" for want of a better name. This

earthen vessel is an open receptacle not unlike a sauceboat of the modern times, with a beak for inserting a wick made of a bundle of threads of the size of a small lead pencil. There used to be a spindle wheel at which the damsel would be, or pretended to be, at work. In those days girls, who did not know how to turn the spindle wheel or how to weave garments for their own wear, were characterised as lame persons; and the young men, who could not read and write, were branded as blind persons. There is therefore no wonder that the girls made efficient housemaids and that the men were all literate.

Both in Lower and Upper Burma including Arakan Division, (excepting Tenasserim Division) men from the age of sixteen years upwards wore only *pasoes* (men's garment for the nether portion of the body, measuring eight to nine yards in length) during the day and the night to distinguish themselves from the women whose *Htamein* or *Longyi* (skirt) measured less than two yards. The Talaiings or Mons of Maulmein, the Tavoyans, and the Merguians wore the *Longyi* as now worn by the young and old all over the country, and could be at once distinguished from the Burmans or Burmanised Talaiings. The *pasoe* has now been assigned to a place of dignity and is worn only in court and on festive occasions.

A young man with robust health, strong, active, industrious and brave would be greatly admired while a weakling or an effeminate young man or one who wore his *pasoe* reaching to the ankle as if he were vieing with the women, would be greatly despised, hated and made the butt of ridicule by the young damsels. The young men tied their knot of hair called "YAUNG" (which is now fast disappearing) at the top of the head while the women tied theirs at the back of the head. Now an order of reverse has taken place, and the women tie their knot of hair at the forefront of the head directly at the edge of the forehead, thereby pushing the men's top-knot farther back. However the men, as if in disgust, cut off their top-knots in towns and large villages and wear the English crop at the present day. Just a few years ago the writer took the measurement of the hair of one of his friends who lived in the same place with him and found it to measure six feet and five inches in length, and the growth thick and luxuriant. I have committed a digression from the subject, and I must now go back to the place of courtship where the diverse articles enumerated above were set.

The oil of the LAMP would exhaust itself, after an hour or two, or the wick protruding out of the beak would burn out. In either case the young man must replenish the oil or the wick from time to time. In some houses no wick was used. In place of the wick dried rice or saw dust was used. It would give a flame bright enough in the room; but whenever the flame began to go down, it had to be flared up by the young man by pouring more crude earth oil or by bringing up the saw dust or

the dried rice to the surface of the crude oil. The smoke, thus emitted by the lamp, blackened the roof of the house, the mosquito curtains, the furniture of the house; and would sometimes be fanned full into the face of the young man by a treacherous puff of the wind and would tickle the tears from his smarting eyes. All the time the young man would be meddling with the lamp whenever he found no words to convey to the damsel while the damsel would be seemingly engaged in turning the spindle wheel.

It was the custom for the young man to start the trend of the conversation; the part played by the damsel was generally that of a silent listener. She could however be made to answer questions or riddles called *Sagatha* (စကားတော) in Burmese. If the girl was clever she would sometimes start tying the Gordian knot of setting riddles when an opportunity presented it to her.

Thus a year or two would be spent in this manner of courtship. The following are some of the commonest kinds of riddles set in testing the intellectual powers of one by the other.

- (1) To the inquisitive young man who wanted to know the age of the damsel and who expected a plain answer, the damsel would reply only in riddle thus :—

အလန်တရာမြွေ၊ တွင်းမှာခွေ။

တနေ့လက်နှစ်သစ်။

ကျန်မခါသတ္တရာပေါ်ရှင်။

A hundred fathom long snake at the pit coiled,

(Issued forth) each day at two fingers' rate,

That, sir, is my age.

The Burmese lineal table and the arithmetic of it were supposed to have been learnt by the young man at the cloister; and his knowledge of the science of calculation was thus tested. If he was intellectual, he would make the calculation thus and would give the answer accordingly:—

The breadth of eight fingers makes one *Maik* (a clasped fist with thumb extended, measuring six inches); three *Maiks* make one cubit (half a yard); four cubits make one fathom (two yards). So the snake measuring one hundred fathoms would be 400 cubits or 1,200 *Maiks* or 9,600 fingers in length. It issued forth from the pit at the rate of two fingers a day; so it would take 4,800 days to bring its full length out of the pit. Thus 4,800 days, divided by thirty days, make 160 months. The months, divided by 12, makes 13 years and 4 months, the age of the damsel.

The young man would solve the riddle as above if he knew the method of calculation. Sometimes he would ask for time to solve it. If he could not, then he would say “ဝန်းပေးပါဦး” “I offer you flowers”, meaning “I make an offering of flowers to you so that you may solve the problem for me”. This is the usual thing to say instead of the words “I give it up.” Then only the girl would give the solution. Generally the young man would not give it up readily; he would rack his brain to solve it as the acknowledgment of his ignorance of the solution was looked upon as more disgraceful than that of the girl.

I shall now proceed to give some of the riddles set on such occasions and the solutions thereto.

*Question*—How deep is the well in front of your house?

*Answer in riddle*—The rope, attached to the bucket, if extended the entire length when the bucket is dropped into the well, is one cubit (half a yard) too long; but if the rope be doubled up, it would be one cubit too short. Find out the depth of the well.

*Solution*—Length of rope four cubits. Depth of well three cubits.

*Riddle*—ကြာတအင်းနှင့်ကျေးတသင်း။

ကြာပွင့်ပေ၇၅၊ ကျေးတသင်းနားနေသည့်အခါ၊ ကြာတပွင့်ပိုပါသည်။

ကျေးတသင်းအားလုံးမြန်နေသည့်အခါ၊ ကျေးကတကောင်ပိုပါသည်။

ကြာတယ်နှစ်ပွင့်၊ ကျေးတယ်နှစ်ကောင်ပါလဲ။

There is a lake of water lilies with a flock of parrots. If the entire flock be perching on the lilies, the number of lilies exceeds the number of parrots by one; but when the parrots are on their wings hovering above the lilies, the number of parrots exceeds the number of lilies by one. How many lilies and how many parrots are there?

*Solution*—Three lilies and four parrots. The four parrots, perching in couples on two lilies, would leave one lily unoccupied; on their wings, they would exceed the lilies by one.

*Young man*—“Don’t you think that you and I will make a very happy pair as our predilections and prejudices are identical?”

Young woman, scenting an advance of love, would reply coyly in a riddle, neither encouraging nor discouraging the advance, thus :—  
“ချည်သေးလို့၊ ခြားလည်ပါ” (“The thread being slender, the spindle wheel turns not.”)

The young man should understand the answer in rhyme thus :—  
“ငယ်သေးလို့၊ နားမလည်ပါ” (“Being of age tender, I understand not.”)

The young woman, feeling sleepy and finding that the young man was tarrying too long, would say: “ဝိတ်ပင်မှာဖေ၊ အင်းမှာချော့” (“As the cork is at the cork tree, so the leech is in the fishery.”)

The young man must understand that it is a polite request asking him to leave the house, and he must know the rhyme of it thus:— “အိမ်ရပ်ပါပေါ့၊ ဆင်းပါတော့” (As I am feeling so sleepy, ‘begone’ I say to thee”).

An amusing story is told of a dense young man who could not take the hint thus thrown out to him. He tarried a while longer, and the damsel, taking advantage of the midnight cock-crowing just at the moment, asked him “ဘာကြော်ပါလိမ့်” (“What cock is it?”), meaning thereby “What is the time of this cock-crow?” The young man thinking that his *fiancée* wanted to test his knowledge of the chanticleers of the neighbourhood answered with alacrity:— “သိုးရိုအိမ်နောက်ဘေးကဝေတကောင်းကြက်ကြီးတုန်နေတာပေါ့” (“It is the big Chittagong rooster that is crowing at the back of Po So’s house.”) The young woman could not suppress a smile, but hastened to explain her meaning by saying:— “အိုအချိန်ကိုပြောတာပါ” (“Oh, I was taking about the *achein*.”) Unfortunately the Burmese word “*achein*” is capable of being construed in more senses than one; it may mean “TIME” just as much as it may mean “WEIGHT” and in the eyes of his lady-love the dunderhead of a *lubyo* (young bachelor) sank still deeper in the mire of ignorance when he promptly replied:— “အချိန်တော့နှစ်သိသာငါးဆယ်ထက်မနည်း” (“The cock would weigh not less than two and a half viss.”)

The above customs prevailed among the middle and lower classes in Burma proper. A marriage, coming off short of three years’ courtship was greatly scandalised. Elopement was unknown and never dreamt of. In Arakan Division, the Arakanese people do not countenance any kind of courtship in any form; they have, from time immemorial, followed explicitly the Bengali Indian custom owing to proximity of Arakan to Bengal. The parents, or persons in *loco parentis* in the absence of parents, arrange the marriages without much regard for the wishes of the young people who in most cases were more infants in their teens. In those days the young man’s party both in Arakan and in Burma proper had to undergo a searching cross-examination as regards his ancestry before the proposal of the young man’s party for the marriage was accepted.

Among the Talaings or Mon people of Tenassarim Division, the manner of courtship is quite different from that of the Burmans. There the young man is not received in the house; he goes to the back of the house where the young woman has her bed, and speaks to her from outside the house in a low tone through an aperture made in the wall by the side of the bed. The aperture made by the young men of the quarter

MEDIEVAL BURMESE COURTSHIP.

or by the lover of the girl, is quite a small one, not more than half an inch in width by four or five inches in length. If the girl be sleeping, she is awakened by being lightly beaten by the young man with a small cane or stick passed through the aperture through which even the fingers could not be thrust, much less a hand. However wild stories are current in Burma proper that the Talaings permit their daughters to be courted by means of "အောင်နိုင်" (Auk Hnait, which means—driving of the hand from below the house through a hole large enough to admit a hand); and that many a young man, who impersonated the lover, had his fingers cut off with nut crackers as soon as the young woman came to know by the sense of her feeling that the hand was not that of her lover. No such thing ever happens now as the apertures are never larger than what has been described above. The custom is now fast disappearing although it is as moral as the Burmese courtship, if not more so.

The manner of courtship among the Karens is different from those of the Burmans and the Mons. On the first visit by pre-arrangement, the young man had to go right into the thick mosquito curtain of the young woman; but he would be at once arrested as a thief if he did not carry a lighted Burmese cheroot puffing it all the time and trying to find his way to the bed of the young woman in complete darkness. Sometimes he had to pass all the beds of the male members of the family who were sleeping or feigning to sleep.

The young man had to make love in complete darkness; but custom forbade that he should indulge in anything that is dishonourable. The writer once met a young Burman who recounted his experiences of the Karen courtship. It appears that he failed to observe the etiquette taught him by his Karen friends; that he happened to have made his advances too quickly; and that the penalty paid by him was in the form of a surprise knock on his forehead given by his lady-love with the thick triangular silver bangle worn by her. The knock was so forceful that it made a hideous gash which bled profusely. The writer saw the mark which the young Karen woman gave and which the unfortunate young man would carry his grave.

The manner of courtship written by U Tin in Burmese and published on page 133, Part III, Volume XII of this journal was that in vogue in the Burmese times among the aristocrats only and not among the middle and lower classes.

MAUNG THA KIN.

---



## AN OLD ARAKANESE ROMANCE.

Alaungdaw Dhamma Wizaya Thagyin is the title of an old Arakanese Romance edited by Saya Tun and published by the Akyab Press in 1924. Thagyin is a poem recited by Rhapsodists. This class of poetry was at one time very popular in Arakan, especially among the older generations. But it is altogether dying out. We therefore congratulate Saya Tun on the revival of ancient Arakanese literature. He is a vigorous writer. The language still is old Arakanese. Although the title of the book sounds religious, the story is secular. It is believed to be an earlier production than Kawkannu, an Arakanese National Epic written by Wimala during the reign of King Minba of the Mrauk-u Dynasty. The story compares very favourably in interest with the Dewa-Gomban recently staged by the students of the Rangoon University College. The plot of the story runs as follows :—

The King of Benares had two sons named Dhamma Wizaya and Abhaya Kumara. As was usual with Princes, they had to repair to Taxila for education. Before the death of the Teacher he gave the elder Prince a talismanic ring which if worn on a right hand finger would serve as a love charm but if worn on a left hand finger would transform the wearer into a female. On the death of their Teacher the two Princes set out in search of fuel for the cremation of their master but failed to collect enough of sandal and other scented wood for their purpose. They therefore made up their minds to part for separate searches. The elder lost his way in the wood and neared the city of Chedi at sunset. The Prince approached the house of the Royal Gardener in the suburb of the town and asked of the Gardener's old wife leave to put up in her house for the night. "I cannot put up any male person" said the old lady. She added "Since my duty is to present every morning wreaths and bouquets to the King's daughter, Suwanna Paba, I am not permitted to keep even my own grandsons." Thereupon the Prince thought of his master's ring and quickly put it on one of his left fingers so that he was transformed into a rustic girl. The girl asked the old lady to examine her person more carefully. The latter satisfied herself that the stranger was a girl and remarked, "Oh, my eyes have been dim and I have once been beaten by my husband for having accepted a false coin." The old lady then permitted the girl to put up in her house.

On the following morning the old lady collected an assortment of various flowers and made a garland for presentation to the Princess. The girl asked the old lady leave to assist in the making up of the wreath. The old lady replied, "Oh, you rustic girls do not know how to make one worthy of a Princess, but I have been trained in my profession for years". The girl rejoined, "Please let me try and if my workmanship be bad you may reject it". The girl designed the wreath to represent

the cosmogony of the Universe with the Chedi City in a prominent position and concealed a message for the Princess inside the wreath. The message ran as follows :—"Be it known that the maker of this wreath is a Prince by birth but circumstances have led to his temporary sojourn in the Gardener's house in the form of a girl. He has been longing to see the Chedi Princess of world-renowned beauty. But if his love be unrequited, the forlorn stranger would have to return to his land."

On the night previous the Princess had a curious love dream of a young Prince embracing her.

The old lady on seeing the exquisite workmanship exclaimed, "Oh, in my younger days, I used to make more beautiful wreaths". But inwardly she rejoiced at the expectation of a reward from the Princess and she hastened to the Palace and presented the wreath to her mistress. The Princess on seeing the exquisite garland thought to herself. "This extraordinary piece of handiwork could not have been done except by some superman" and hastily picked it up for a more careful examination in her private chamber. She discovered the secret message. After reading the contents of the message, she returned to her audience hall and questioned the old lady as to who the maker of the wreath was. The latter was not slow in taking upon herself the whole credit. The Princess replied, "If my Royal father happens to hear that I bedeck my person with such a garland he would surely punish me for my folly. Oh ! wretched woman, how dare you to have made such a wreath with sacred objects etc., unworthy of a female like myself? You must have designed it with the object of bringing down my father's wrath upon my head and you are fined Rs. 200 for your foolishness". The mistress then gave orders to her maids to seize the old lady and tie her up. The old lady now confessed the truth. The Princess with a smile ordered the release of the old lady and sanctioned a reward of Rs. 1,000 for the author and said to the old lady, "Take this reward of Rs. 1,000 and this betel quid to the author and bring her so that I may learn from her how to make a similar garland". The old lady brought the girl to the Palace but the girl took her seat on the Princess' sofa to the amazement of the old lady. The Princess remarked to the old lady, "Never mind. She is a rustic girl and does not know manners and I tolerate her". The Princess while alone with the rustic girl in her bed room wished to test whether she was really a male person as alleged in the secret message. The rustic girl satisfied the Princess by putting the talismanic ring on a right finger. And lo ! she was transformed into a Prince, a handsomer person than whom the Princess had never before beheld in her life. The Princess observed, "Now, since you are a male, it is not meet that you should be here and we must separate. I will however assign to you a separate chamber to sleep in." The Prince was sorely aggrieved at this sudden turn of events and pleaded with all the eloquence at his command to be allowed to love her but the Princess replied that there could be no



question of bed partnership till they were properly married with the royal sanction. The Prince at last succeeded in overcoming all her objections to share her bed and the two secret lovers passed their happy nights for some time without suspicion from any quarters. The royal father's order was so strict that even a male fly should not be allowed to alight on his daughter's person and she had to be weighed against flowers every morning. When she conceived, her weight exceeded that of the flowers. The chief Maid of Honour reported the fact to the King lest she should be punished for her omission to do so.

The King ordered the Guards of the Palace to surround the Princess' compartment. But the Guards could not find any trace of a male intruder. The King then summoned his daughter to his presence and questioned her closely and enjoined upon her to return a true answer on pain of punishment. The Prince in the garb of a rustic girl at day time feared that his lady-love would be ill-treated by her father and wished to save her at his own expense. The Prince respectfully submitted to the King that it was not the Princess' fault but it was his own. The King disbelieved the girl's story and asked her to prove the truth of her story by re-transformation into a male person, and the girl was instantly transformed in the King's presence. This wonderful event coupled with the amiable qualities of the handsome Prince allayed the wrath of the King. The King ordered that the Prince should be expelled from his Kingdom and the Princess should be transported to the Malayu Island where a Marble Palace had been built for her accommodation with the necessary provisions for her sustenance. The Marble Palace was surrounded by seven walls with seven iron-barred gates. The Queen interceded on her daughter's behalf but without success, and the Princess was conveyed to the lonely island on a ship, like Prospero's daughter Miranda. There, separated from all those whom she loved, she saw nothing but the foam and froth of the angry waves on all sides of the island and her thoughts amidst the sands of the surging waves, went back now to her mother, now to her loving husband. But her one constant anxiety was about the critical day of her confinement as her pregnancy was advancing from day to day.

The Prince in his exile in the woods did not know whether he had been sent but his one constant thought was for his loving wife but he did not know her whereabouts. Through fatigue he fell into a sleep under a bush near a lake known as Mandagiri in the Himalaya regions. That day the seven fairy daughters of Duma Raja of the Kailaspa happened to come down in order to play a game of "hide-and-seek" in the lake. As they were about to fly back to the Silver Mountain their homeland, they descried the young Prince asleep and the sisters began to quarrel with one another as to who should marry the young man. The youngest sister, the most sensible of all, advised her elder sisters to wake up the Prince and leave it to his choice. The Prince was awakened but he rejected all overtures of love from the fairies and frankly told them all that he regarded all women other than his wife as paddy husk.

This unsavoury remark evoked the anger of the elder sisters who all flew away to the Silver Mountain. The youngest sister took pity on the Prince for his constancy of love and observed to him, "I have heard it said by my father that Suwanna Paba is now confined in a Marble Palace on the Malayu Island. Now take this horse charm from me. If you recite the formula, a flying horse will be at your service". The Prince lost no time in crossing over to the Malayu Island but found the Marble Palace barred seven times and could not get an entrance into it. He announced himself several times at the doors. The lovely Princess through fear of demons of the Island, would not open the doors before she fully recognised her husband's voice. As soon as the doors were flung open, the two lovers embraced each other. The wife one day said, "We are not at all prepared for my critical day which is drawing nearer and nearer". The Prince summoned the flying horse and said to his wife, "I will go and collect the necessary medicines on the Mainland and return in good time before your travail begins". He landed on the Kingdom of Madras but thought to himself, "If I go about in my present garb, people who hanker after me might hamper my movement, and a day's unnecessary delay means danger to my wife's delicate health." So he assumed the form of a physician with a bag under his arm. As this royal physician passed the Palace of the King of Madras, the Madras Princess Sudhammachari looking out of her window fell into a swoon. Her Chief Maid of Honour reported to the King that there was no apparent cause except that a physician passed the Palace before the Princess fell into the swoon. The King suspected that he had charmed his daughter and ordered him to be brought to the Palace. The physician who was buying drugs in the bazaar said he was merely a jungle physician buying drugs for his wife's confinement, but he pleaded in vain. As soon as he was brought to the presence of the Princess, the latter recovered her senses and when she was progressing favourably she submitted to her Royal father, "I am very nearly all right now, but I fear a relapse if this physician were allowed to depart. So, Sir, please keep this man near me as long as you can." And the King ordered that a watch should be kept night and day against his possible departure. At last he was compelled to marry the Madras Princess. In the meantime a Yogee wanted a royal child for the successful discovery of the Philosopher's Stone which would not only turn a baser metal into a nobler one but would prolong life to almost eternity. His clairvoyant power enabled him to discover Suwanna Paba in an advanced stage of pregnancy on the lonely Malayu Island. He therefore alighted on the Island at dead of night. But he found all the iron-barred doors of the Marble Palace securely locked and he uttered a formula of Open Sesame as in the Tale of Forty Robbers. He next made a magic preparation with which he drew a circle round the navel of the sleeping lady. This application had the effect of quickening the child which was naturally delivered without travail. The Yogee took away the child. The Princess on awakening was sorely perplexed and aggrieved at the

mysterious loss of the child in her womb and suspected the Demons of the Inland to have done the trick. She was therefore greatly aggrieved at the thought of some harm befalling the innocent child.

Now that over two months had elapsed since he left the Island, the Prince was unhappy at the thought of the approaching day of his wife's confinement without assistance. But he had no opportunity of escape. So one day he arranged for a Palace entertainment after which all the Palace guards fell fast asleep. Now was his opportunity to escape through a trap-door on the roof of the Palace. He summoned his flying horse but through consideration for the Madras Princess, he left a note that it was not through hatred for the Madras Princess that he flew away, but he was obliged to do so for his wife's sake. On his arrival at the island to his utter amazement he found his lonely and lovely wife in great grief for the mysterious loss of the child. His own grief was aggravated by the thought of his enforced absence. But on looking about the Marble Palace the aggrieved couple came upon the Yogee's note that the child was taken away for a certain purpose of his own. But for the consolation of the aggrieved parent the note contained an assurance that the child would be restored as a fully grown-up and accomplished lad. With this assurance they bided their time on the lonely island hoping that one day the child would be restored to them without any harm befalling it.

The Queen of the Chedi King now fell ill and pleaded to her Royal husband for the last sight of her exiled daughter before death. The King ordered a ship to bring his daughter back. But the ship brought back the son-in-law also. And the King appointed him Heir Apparent. The Crown Prince and Princess lived together happily for sometime in the Chedi Palace, when the Prince one day was burned with a longing to see his near kinsmen in the City of Benares. The Princess on seeing her husband unhappy asked him to tell her the reason of his unhappiness. The Princess on discovering it approached her Royal father for permission to accompany the Prince on a visit to Benares. The King at first did not like the idea but was finally persuaded to grant them leave for a short visit. As it was not proper for a lady to make a fatiguing journey on the flying horse, the King fitted out a ship to take his daughter and son-in-law to Benares.

The Madras Princess on finding herself deserted by her husband for the sake of Suwanna Paba summoned a Sorceress and charged her with the destruction of her rival so that her husband might return her. The witch through her magical powers managed to enter the Chedi Palace, but could not get an opportunity to do any harm to Suwanna Paba. When the Prince and Princess set out on their voyage to Benares, the Sorceress flew into the ship and charmed Suwanna Paba into a sound sleep in her cabin. The Sorceress exchanged clothes with Suwanna Paba

and transformed herself into the latter. Carrying the latter out of the bed she pushed her overboard without the knowledge of any one on board ship. The Prince believed the transformed witch to be his real wife.

The Yogee on being asked by the boy of his parentage now saw that Suwanna Paba was on the point of being drowned and fearing that if she were drowned to death he would not be able to redeem his promise of restoration of the child to its parents, it became incumbent on him to save the life of Suwanna Paba and he realised that the time had also arrived for the restoration. So he put the boy into a magic casket and locked it up with a legend engraved on the lid. The legend read, "This casket contains Suwanna Kumara the son of Dhamma Wizaya and Suwanna Paba. Only his real mother would be able to open it without any difficulty. Any other woman attempting to force it open would kill the boy inside." The Yogee came over and floated the watertight casket on the sea and at the same time saved Suwanna Paba by safely landing her on the coast where she got a temporary lodging in the house of an old couple. Dhamma Wizaya and his false wife also disembarked when the casket found by a fisherman was brought to him. He knew that it was his own son inside the casket and still thinking the witch to be his own wife urged her to open the casket. But the witch not being the boy's real mother and fearing that her identity would be disclosed detested the very sight of the casket and wished at her heart to throw it back into the sea. The Prince suspecting that his wife who was reluctant to open the casket could not be the real mother of the boy, had it proclaimed by beat of gong that a reward of Rs. 1,000 would be offered to any one who undertook to open the box without force. No one undertook the task until the Royal gong man came to the outskirts of the town when Suwanna Paba knowing that it was her own son restored by the Yogee urged the old couple to undertake the task by accepting the reward. The old couple at first hesitated a good deal but were finally prevailed upon by the unknown female stranger. Dhamma Wizaya ordered her to be brought to his presence to open the casket. But Suwanna Paba asked for a new suit of dress worthy of one who would become a queen and required that she should be conducted in the right royal manner on the road lined with "Yazamats" from the Prince's temporary residence to the house of the old couple. The Prince

complied with her requests. On arrival, Suwanna Paba easily opened the casket and the young Prince came out of the casket with a magic staff received from the Yogee. On looking round he discovered that the false wife of his father was a witch. So he drew a circle with the magic wand on the back of the witch, when she was retransformed into her original form of a witch. Prince Dhamma Wizaya then ordered her hairs to be plucked out from her head and had her thrown into the sea.

Scholars will perhaps be able to tell us on what Indian model the story is based or whether it is due to the originality of an Arakanese genius. We may conclude this review with a remark that the author of the story in the present edition is not devoid of humour.

M. K.

# PROCEEDINGS

OF THE  
BURMA RESEARCH SOCIETY.

## TEXT PUBLICATION SUB-COMMITTEE.

*The Eighteenth meeting of the Text Publication Sub-Committee of the Burma Research Society, was held at University College, on Wednesday, the 10th August 1927, at 8 a.m.*

### PRESENT.

1. Mr. J. S. Furnivall, B.A., I.C.S., (retd.) in the chair.
2. Prof. Pe Maung Tin, M.A., B.Litt., I.E.S.
3. Mr. A. Cassim, B.A. (*Secretary*).

### MINUTES.

1. Confirmed the minutes of the Seventeenth meeting of the Sub-Committee held on the 9th February 1927.

2. Arising out of Para 2 of the above minutes, the General Editor reported that he had been making enquiries for Manuscripts of U Kyin U's "Winkanta Zat" and U Ponnya's "Myittaza" but had not yet heard of them, though he had received intimation about Manuscripts of other works.

*Resolved* that an enquiry be made through the Society's Journal asking owners of the above works to communicate with the General Editor.

3. With reference to Item 4 of the minutes of the last meeting, *resolved* that the publication of the works mentioned therein be held in abeyance.

4. With regard to Resolution 7 of the Executive Committee meeting of the 9th March 1927, it was *resolved* to report as follows:—

- (a) That the accounts seem to indicate that it should be possible to separate the Text Publication Fund from the General Fund of the Society and make it self-supporting;
- (b) That the management of the Fund may be left to the Text Publication Sub-Committee, but that the payment to an editor of an honorarium exceeding Rs. 100 should require the sanction of the Executive Committee; and

- (c) That with reference to the granting of concessions in the price of books, etc., to members and others, the Sub-Committee is of opinion that practical difficulties appear considerable while the advantages are doubtful; and that since it is proposed that in the future the Text Publication Fund should be self-supporting there seems to be little reason for granting the concession suggested.

5. In anticipation of the approval by the Executive Committee of the Resolution 4 (b) above, it was *resolved* that the following honoraria be offered to the undermentioned editors who have already contributed to the success of the Text Publication Series :—

- (1) U Po Sein—Rs. 25 for the first edition of the “Owada Du, Pyo”, and Rs. 15 for the second edition;
- (2) Saya Pwa—Rs. 50 for Maung Kala’s Mahayazawingyi;
- (3) Saya Lin, A.M.P.,—Rs. 25 for the Papahein Zat;
- (4) Prof. Pe Maung Tin, M.A., B.Litt., I.E.S.,—Rs. 25 for the Padetha Thigyin.

6. Resolved that in respect of the Dewagonban Zat, Ommadandi Pyo Kandawmingyaung Myittaza, Yesagyo Khon Kaukchetsu, and the Uteinna Pyo, on which no returns have been received in the form of royalties, the question of payment of retrospective honoraria to the respective editors be held in abeyance till the first instalment of royalty is received.

7. *Resolved* that the request of the Aungzeyatu Press for permission to print a second edition of the Dewagonban Zat be granted on condition that a royalty at the rate of 10 % of the sale proceeds is paid to the Society and the number of copies is limited to 2,000.

8. The General Editor reported that the Mahathutathoma Pyo had been sent to the Press for publication and would be out soon.

9. *Resolved* that the names of the publications with prices etc., be regularly printed in the Journal.

AHMED CASSIM

*Secretary,  
Text Publication Sub-Committee.*



## PROCEEDINGS.

## TEXT PUBLICATION SUB-COMMITTEE.

*The nineteenth Meeting of the Text Publication Sub-Committee of the Burma Research Society, was held at University College, on Thursday, the 15th December 1927 at 8 a.m.*

## PRESENT.

1. Prof. Pe Maung Tin, M.A., B. Litt. I.E.S. (in the chair.)
2. J. S. Furnivall, Esq., M.A., I.C.S., (retd.)
3. U Tun Pe, M.A., B.L., M.R.A.S.
4. Ahmed Cassim, Esq., B.A. (*Secretary*)

## MINUTES.

1. Confirmed the minutes of the 18th meeting of the Text Publication Sub-Committee held on the 10th August 1927.

2. Resolved to recommend to the Executive Committee that the following be added to the rules of the Society.

“The General Editor of the Text Publication Series shall be *ex Officio* Chairman of the Text Publication Sub-Committee.”

3. The General Editor reported that the Yesagyo Khon Kaukchetsu, Udeinna Pyo, and the Dewagonban Pyazat (second edition) had been published since the last meeting.

4. The General Editor also reported that the Mahathutathoma Pyo and the Pyinsa Papi Yagan were in the Press and would be out soon.

5. Considered Mr. Furnivall's letter, dated, the 2nd December 1927, suggesting to seek financial assistance from the University or the Government for the publication of classical texts, sittans, etc.

The Text Publication Sub-Committee is of opinion that works required for the Honours and Pass Degree candidates in Burmese Literature, Burmese History, etc., are unlikely to prove remunerative and that if the Sub-Committee is to undertake the editing of such texts it will be necessary to obtain financial assistance. It believes that it could apply a sum of Rs. 3,000 a year in this manner to the advantage of the University.

*Resolved* therefore that the Society approach the University with a request for a grant of Rs. 3,000 during the financial year 1928-29.

6. Resolved that in future, wherever possible, a glossary of important words be added to texts edited by the Text Publication Sub-Committee.



## PROCEEDINGS.

7. Resolved that the Text Publication Sub-Committee approves of the publication of the Kyigan Myittaza in the Text Publication Series, the work to be edited by Saya U Pwa.

8. Resolved that the 1st edition of the Pyinsa Papi Yagan should not exceed 3,000 copies.

AHMED CASSIM,

*Secretary.*

*The 17th December 1927.*

*Text Publication Sub-Committee.*

---

*A meeting of the Executive Committee of the Burma Research Society was held at University College, Rangoon, on Tuesday, the 20th September 1927 at 6-30 p.m.*

## PRESENT.

J. S. Furnivall, Esq., M.A. (Chairman)  
 C. W. Dunn, Esq., C.I.E., B.A., I.C.S.  
 Prof. Pe Maung Tin, M.A., B.Litt., I.E.S.  
 G. H. Luce, Esq., B.A., I.E.S.  
 U Po Sein, A.T.M.  
 Prof. D. G. E. Hall, M.A., F.R. Hist. S., I.E.S.  
 U E Maung (*Honorary Secretary*)

## MINUTES.

1. Confirmed the minutes of the Executive Committee held on the 9th March 1927.

2. Recorded—

(a) Minutes of the Dictionary Sub-Committee held on 16th February 1927;

(b) Office circular No. 8, dated the 2nd May 1927, according permission to Messrs. Major & Co., to reprint Saya Thein's paper "Old Rangoon";

(c) Prof. Luce's letter regarding his purchase of books for the Society's Library. The action of the Honorary Treasurer in paying Pounds £ 34 8s to Prof. Luce at the request of the Secretary was confirmed.

3. Resolved that the Progress Report on the working of the Dictionary Sub-Committee be circulated again and consideration of the same postponed till after such circulation.

4. The minutes of the 18th meeting of the Text Publication Sub-Committee held on the 10th August 1927 are recorded, and the recommendations of the Sub-Committee that '4. with regard to Resolution 7 of the Executive Committee meeting of the 9th March 1927, it was *resolved* to report as follows:—

- (a) that the accounts seem to indicate that it should be possible to separate the Text Publication Fund from the General Fund of the Society and make it self-supporting;
- (b) that the management of the Fund may be left to the Text Publication Sub-Committee, but that the payment to an editor of an honorarium exceeding Rs. 100 should require the sanction of the Executive Committee; and
- (c) that with reference to the granting of concessions in the price of books, etc., to members and others, the Sub-Committee is of opinion that the practical difficulties appear considerable while the advantages are doubtful; and that since it is proposed that in the future the Text Publication Fund should be self-supporting there seems to be little reason for granting the concession suggested.

"5. In anticipation of the approval by the Executive Committee of the Resolution 4 (b) above, it was *resolved* that the following honoraria be offered to the undermentioned editors who have already contributed to the success of the Text Publication Series:—

- (1) U Po Sein—Rs. 25 for the first edition of the "Owada Du Pyo", and Rs. 15/- for the second edition;
- (2) Saya Pwa—Rs. 50 for Maung Kala's Mahayazawingyi;
- (3) Saya Lin, A.M.P.—Rs. 25 for the Papahein Zat;
- (4) Prof. Pe Maung Tin M.A., B.Litt., I.E.S.,—Rs. 25 for the Padetha Thigyin".

5. The Text Publication Sub-Committee reports that Saya Pwa has kindly given a donation of Rs. 50. Resolved that Saya Pwa's gift should be suitably acknowledged.

6. Resolved that Mr. Swithinbank's gift of Rs. 50 sent through Prof. Luce be suitably acknowledged.

7. Resolved to hold the General Meeting at University College at 6-30 p.m. on the 30th September 1927, when Mr. Luce will give a lecture.

8. Mr. Luce on behalf of Mrs. Ward presented books belonging to her deceased son Prof. Ward to the Society and the Secretary was instructed to make suitable acknowledgment for the gift.

MAUNG E MAUNG,  
*Honorary Secretary.*

*The 8th October 1927.*

## PROCEEDINGS.

*A Meeting of the Executive Committee of the Burma Research Society was held at University College on Saturday, the 18th February 1928, at 6-30 p.m.*

## PRESENT.

1. Sir Guy Rutledge, Kt., K.C., M.A. (President)
2. Prof. Pe Maung Tin, M.A., B.Litt., I.E.S.
3. Mr. D. G. E. Hall, M.A., F. R. Hist. S., I.E.S.
4. G. H. Luce, Esq., B.A., I.E.S.
5. Prof. F. J. Meggitt, M.Sc., Ph.D., I.E.S.
6. A. Cassim, Esq., B.A.

## MINUTES.

1. In the absence of the Honorary Secretary, Mr. A. Cassim acted for him.

2. The minutes of the meeting of the Executive Committee held on the 20th September 1927 were confirmed.

3. Recorded—

(a) the minutes of the 19th. meeting of the Text Publication Sub-Committee held on the 15th. December 1927 ; and

(b) circular No. 21, dated the 9th December 1927, accepting with thanks Prof. Pe Maung Tin's donation to the Text Publication Fund of Rs. 25 being his honorarium for the editing of the Padetha Thigyi (No. 6 of the Text Publication Series).

4. Approved the Progress Report of the Dictionary Sub-Committee for the period from the 1st October 1926 to the 30th June 1927, and the Statement of Accounts for the year ending the 31st March 1927.

5. Considered Prof. Meggitt's suggestion to approach the Government for an annual grant of Rs. 1,500 to enable the Society to publish the scientific number of the Society's Journal quarterly or half-yearly.

*Resolved* to recommend to the University Prof. Meggitt's proposal for favourable consideration ; and failing the University to approach the Government for the grant.

*Resolved* further that the Honorary Secretary be requested to draft his letter in consultation with Prof. Meggitt.

6. *Approved* a note dated the 12th January 1928 from the Secretary, Text Publication Sub-Committee, proposing—

(a) the addition of the following to the rules :—

“The General Editor of the Text Publication Series shall be *ex-officio* Chairman of the Text Publication Sub-Committee”;

## PROCEEDINGS.

- (b) and the application to the University of Rangoon for a grant Rs. 3,000 during the financial year 1928-29 for the publication in the Text Publication Series of classical texts, suttans, etc., for the benefit of Honours and Pass Degree candidates in Burmese literature, Burmese history etc.

7. Resolved to recommend for adoption at a General meeting of the Society Mr. Furnivall's suggestion : "Where a member has paid the annual subscription for fifteen years and thereafter ceases to reside in Burma he shall be allowed to compound for Life Membership at Rs. 25 or to continue as an Ordinary Member on a special Absentee subscription of Rs. 5 per annum.

Further, that a Sub-Committee consisting of Prof. Pe Maung Tin, Mr. L. F. Taylor, and Prof. Hall (Convenor) be appointed to report within two months on the feasibility of providing similar facilities for members who have paid the annual subscription for fifteen years who are permanently resident outside a radius of 25 miles of Rangoon.

8. Approved the Honorary Treasurer's proposal to invest Rs. 2,000 in Messrs. Dawson's Bank, Limited, on fixed deposit for one year (Circular No. 4 dated the 28th January 1928).

9. Recorded the invitation of the Fifth All-India Oriental Conference to send delegates to the Conference to be held at Lahore in November 1928, and authorised the Honorary Secretary to convey the regrets of the Society.

10. Considered letter No. 4006/22 B.P. dated the 12th January 1928, from the Registrar, University of Rangoon, requesting the views of the Society on the question of the University taking charge of the whole or part of the Society's Library.

*Resolved* to inform the Registrar that Professors Pe Maung Tin and Meggitt have been deputed by the Society to confer with the University authorities on the question of the basis and terms on which the University would be willing to take charge of the Library without infringing the rights of the Society's members to its use.

*Resolved* also that pending a decision on the above question, Research students of the University be permitted access to the Society's Library on the recommendation of a Professor of the University who is also a member of the Executive Committee of the Society.

11. *Resolved* that His Excellency the Governor be requested to become the Patron of the Society in succession to Sir Spencer Harcourt Butler.

12. *Fixed* Friday, the 9th March 1928, for the Annual General Meeting of the Society and made the necessary arrangements for it.

(At this stage the President left the meeting and Prof. Pe Maung Tin was voted to the chair).

13. *Approved* the Honorary Secretary's draft Report for the year 1927.

14. *Resolved* that a discount of  $12\frac{1}{2}\%$  on Rs. 7/8 be allowed to local book-sellers for the sale of copies of the "Glass Palace Chronicle".

15. *Accepted* with cordial thanks the books presented by Mr. T. Couper, M.A., I.C.S., and *resolved* that the Honorary Secretary be requested to convey to the donor an expression of the high appreciation of the Society for his magnificent gift of extremely valuable books.

AHMED CASSIM,  
for Honorary Secretary.

The 1st March 1928.

---

*The Annual General Meeting of the Society was held at University College, on Friday, the 9th March 1928 at 8-30 p.m.*

There was a fairly large number of members and visitors present, among them being the Hon'ble Mr. Justice U Ba (Vice President), Messrs. G. F. Munro, Mootham, G. H. Luce, Prof. Pe Maung Tin, U Shwe Hman, Prof. and Mrs. D. G. E. Hall, U Ba Thein, U Tun Pe, U Po Sein, and Mr. A. Cassim (Honorary Treasurer)

In the unavoidable absence of the President, the Hon'ble Mr. Justice U Ba B.A., K.S.M. was voted to the chair.

The proceedings began with the reading of a very interesting paper entitled "New Light on British Relations with King Mindon" by Prof. D. G. E. Hall, M.A., F.R. Hist. S., I.E.S. A discussion followed in which Prof. Pe Maung Tin, B. Litt., I.E.S., U Tun Pe, M.A., B.L., M.R.A.S., and Mr. G. H. Luce, I.E.S., took part. At the end of the discussion the Chairman returned a hearty vote of thanks to the lecturer.

The meeting unanimously adopted the addition of the following to the rules of the Society :—

(a) "The General Editor of the Text Publication Series shall be *ex-officio* Chairman of the Text Publication Sub-Committee; and

(b) "Where a member has paid the annual subscription for fifteen years and thereafter ceases to reside in Burma, he shall be allowed to compound for Life Membership at Rs. 25 or to continue as an Ordinary member on a special Absentee subscription of Rs. 5 per annum"

Mr. A. Cassim then presented the Annual Report of the Society for the year 1927 on behalf of the Honorary Secretary who was away from Rangoon.

## PROCEEDINGS.

The report was unanimously adopted.

The next item of business, the election of Officers and the Committee Members for 1928, resulted as follows:—

## PRESIDENT.

C. W. Dunn, C.I.E., I.C.S.

## VICE-PRESIDENTS.

U Shwe Zan Aung, B.A., K.S.M., A.T.M.  
The Hon'ble Mr. Justice U Ba, B.A., K.S.M.  
J. S. Furnivall, Esq., M.A., I.C.S. (Retired).

## HONORARY SECRETARY.

B. R. Pearn, Esq., M.A.

## HONORARY TREASURER.

Ahmed Cassim, Esq., B.A.

## HONORARY EDITORS AND LIBRARIANS.

Prof. Pe Maung Tin, M.A., B. Litt., I.E.S.  
Prof. F. J. Meggitt, M. sc., Ph. D., I.E.S.

## EXECUTIVE COMMITTEE

The Office bearers of the Society and

U Tin, K.S.M., A.T.M.	L. F. Taylor, Esq., M.A., I.E.S.
U E Maung, M.A., LL. B., Bar-at-Law	The Hon'ble Mr. Justice U Mya Bu, Bar-at-Law
U Po Sein, A.T.M.	U Tun Pe, M.A., B.L., M.R.A.S.
D. J. Sloss, Esq., M.A., C.B.E., I.E.S.	Prof. D. G. E. Hall, M.A., I.E.S.
S. G. Grantham, Esq., B.A., I.C.S.	Meer Suleiman, Esq., M.A.
U Maung Gale (8)	G. H. Luce, Esq., B.A., I.E.S.
J. Clague, Esq., I.C.S.	U Set, B.A.
A. Brookes, Esq., M.A., I.E.S.	

## GENERAL COMMITTEE

M. S. Collis, Esq., I. C.S.	U Thein
Major C. M. Enriquez	U Kyi O, B.A., A.T.M., K.S.M.
Taw Sein Ko, Esq., C.I.E	H. F. Searle, Esq., I.C.S.
Dr. O. Hanson,	D. B. Petch, Esq., I.C.S.
U San Shwe Bu	Ch. Duroiselle, Esq., M.A.
U Tha Tun Aung, B.A.	J. A. Stewart, Esq., M.A., I.C.S.
U Hla, B.A.	U Tha Kin
G. E. Harvey, Esq., I.C.S.	

In appreciation of the invaluable services rendered to the Society by the retiring President, The Hon'ble Sir Guy Rutledge, Kt., K.C., M.A. whose absence that evening owing to illness all present at the meeting deplored, it was resolved to record the warm thanks of the Society for the interest he had always displayed in its advancement, and its best wishes for a speedy recovery from his illness.

The thanks of the Society were also accorded to U E Maung, M.A., LL.B., Barrister-at-Law, the retiring Honorary Secretary.

The meeting then dispersed with a vote of thanks to the Chair.

AHMED CASSIM,  
for Honorary Secretary.

## ANNUAL REPORT, 1927.

### ROLL OF MEMBERS.

At the end of the year 1927 the total number of members of the Society was 343 made up as follows:—

Honorary Members	..	..	2
Corresponding Members	..	..	6
Life Members	..	..	56
Ordinary Members	..	..	279
			<hr/> 343

In the previous year the number totalled 351; the decrease of 8 in this year is due to the death of six members and the resignation of seven, five new members being elected.

### OBITUARY.

By the death of Prof. K. M. Ward the Society lost one of its oldest and most energetic members. He was a Vice-President in 1924 and on the Executive Committee since the inception of the Society. U Po Sa, I.S.O., K.S.M., U Tun Hlaing, U Po Sit, Lieut. S. F. Stainer and Mr. R. C. Swinhoe were the members whose deaths during the year, your Executive Committee regrets to report. Mr. Swinhoe served on the General Committee of the Society from 1925-1927.

### OFFICERS AND MEMBERS OF THE COMMITTEE.

The officers and members of the Committee elected at the last Annual General Meeting held their respective offices throughout the year.

## PROCEEDINGS.

## MEETINGS.

A General Meeting of the Society was held at the University College on the 30th September 1927 when Prof. G. H. Luce gave a much appreciated lecture on "A Glimpse of Chinese Sources for Burmese History," Mr. Furnivall, Vice-President, presided.

The Executive Committee held three meetings during the year.

## TEXT PUBLICATION SUB-COMMITTEE.

The Text Publication Sub-Committee for the year was made up of:—

1. Prof. Pe Maung Tin, M.A., B. Litt., I.E.S. (*General Editor*)
2. U Tin, K.S.M., A.T.M.
3. Mr. J. S. Furnivall, B.A., I.C.S. (retd.).
4. Mr. G. H. Luce, B.A., I.E.S.
5. U Po Sein, A.T.M.
6. U Tun Pe, M.A., B.L., M.R.A.S.
7. Mr. A. Cassim, B.A. (*Secretary*)

The Sub-Committee met twice during the year on the 10th August and the 15th December 1927. The proceedings will be published as usual in the Society's Journal.

Since the last Annual Meeting four works have been added to the Text Publication Series which now has nine works to its credit. This year's additions are the Padetha Thigyin and the Papahein Zat published by the Pyi Gyi Mundyne Press, and the Yezagyo Khon Kaukchetsu and the Udeinna Pyo published by the Hanthawaddy Press. The Sub-Committee sanctioned the issue of a second edition of the Dewagonban Pyazat (No. 2 of the Series) the first edition having been exhausted. Two works, *viz.* the Mahathutathoma Pyo and the Pyinsa Papi Yagan are in the Press and expected to be out soon. Arrangements have also been made for the publication of the second volume of Maung Kala's Mahayazawingyi and the Kyigan Myittaza.

It is a great encouragement to the Sub-Committee to know that the Burmese public appreciates the methods adopted in the editing of texts in regard to which it has always been the endeavour of the Sub-Committee to provide those interested in Burmese literature with critical editions of the best masterpieces in the language. With this object in view, the Sub-Committee has moved the Society to approach the University with a request for a special grant of Rs. 3,000 during the financial year 1928-29. Should this grant materialise, as it is hoped it will, it is the intention of the Sub-Committee to bring out, as far as possible, the complete works of the great classical writers of Burmese, such as Thilawuntha, Ratthathara, etc.

A step of importance which, it is hoped, will help in the rapid achievement of the Sub-Committee's aims has been the separation of the Text Publication Fund from the General Funds of the Society, and



the sanction of the Executive Committee to the payment of honoraria to editors of texts. Of the editors of texts so far published to whom honoraria were paid, Prof. Pe Maung Tin, I.E.S., and Saya U Pwa very generously returned their honoraria to the Society by way of donation to the Text Publication Fund. The Sub-Committee desires to offer them its heartiest thanks for their generosity.

#### THE JOURNAL

Three numbers, two ordinary and one science, were published in 1927.

Your Committee is considering the possibility of more Science numbers which however will not result in the curtailment of the ordinary numbers.

#### THE LIBRARY.

The number of books, periodicals, etc. received during the year 1927 was as follows:—

From Government	....	....	6
By presentation	....	....	128
By exchange	...	....	74
By purchase	....	....	114
			<hr/>
			322

With last year's total of 1,469, the Library now has 1,971 books on its roll. 111 research books purchased in England by Mr. Luce on behalf of the Society were added. The thanks of the Society are due to Mr. B. W. Swithinbank, M.A., I.C.S., and to the Royal Institute of Literature, Archaeology and Fine Arts, Bangkok, for the presentation of 46 Siamese books, as also to Mrs. Ward for her gift of 30 books presented in memory of her son, the late Prof. K. M. Ward. The Society owes a debt of gratitude to Mr. T. Couper M.A., I.C.S., for his exceptionally fine gift of 51 books on Burma, many of them being extremely valuable for research studies.

#### FINANCES

The finances of the Society do not disclose any violent fluctuations from those of previous years. The only change of importance during the year was the separation of the Text Publication Fund from the General Funds of the Society. A sum of Rs. 412-1-5 was transferred to the new account which, augmented by donations and royalties on texts published under the auspices of the Text Publication Sub-Committee, rose at the end of the year to Rs. 741-10-5. The total expenditure out of the new fund was Rs. 163-15-3 so that the balance to the credit of the fund is Rs. 577-12-2. The main item of expenditure incurred out of the fund was the payment of Rs. 140 as honoraria to editors of certain texts

published in the Text Publication Series. On the receipts side special mention deserves to be made of the donations to the Text Publication Fund made by Prof. Pe Maung Tin and Saya Pwa of their honoraria of Rs. 25 and Rs. 50 respectively, and a sum of Rs. 50 donated by Mr. B. W. Swithinbank, M.A., I.C.S., credited to the General Fund of the Society. The thanks of the Society are due to these gentlemen for their generosity.

There were no changes in the Society's investments, except that a sum of Rs. 1,000 on fixed deposit with Messrs. Dawsons' Bank, Limited, fell due for realisation during the year and was re-invested in same bank for a period of six months.

The condition of the Society's finances may be studied from the Statements A. B. and C. (i) and (ii) published as appendices to the Society's Report.

*GENERAL.*

Permission was granted to Messrs. Major & Co., Rangoon, to reproduce in their books on Burma Mr. Fraser's and Saya Thein's articles on Old Rangoon.

Exchange of the Society's Journal with the publications of Kern Institute, Leiden, was effected.

(Sd.) AHMED CASSIM,  
*Honorary Secretary.*

## APPENDIX A.

## BURMA RESEARCH SOCIETY.

*Annual Accounts for 1927.*

Receipts.	Amount.	Payments.	Amount.
	Rs. A. P.		Rs. A. P.
Balance from 1926 .. ..	1,695 8 8	Clerk's pay .. ..	480 0 0
Members' subscription .. ..	3,015 0 0	Peon's pay .. ..	204 0 0
Interest on investments .. ..	559 6 0	Printing of Journals (3 issues) .. ..	1,599 0 0
Sale of Journal .. ..	112 0 0	Books, periodicals, &c. .. ..	478 9 3
Sale of Glass Palace Chronicle .. ..	103 8 0	Book-binding .. ..	38 14 5
Postage recovered .. ..	9 0 0	Postage stamps .. ..	203 8 0
Government subsidy for Dictionary Scheme .. ..	2,500 0 0	Printing and purchase of forms .. ..	27 0 0
Miscellaneous } Mr. Swihinbank's donation	50 0 0	Advertising .. ..	76 0 0
	8,044 6 8	Typing fee .. ..	15 10 0
		Stationery .. ..	44 4 0
		Contingencies .. ..	11 15 0
		Subsidy to Dictionary Fund .. ..	1,875 0 0
		Amount transferred to Text Publication Fund .. ..	412 1 5
			5,465 14 2
<b>Text Publication Fund.</b>		<b>Text Publication Fund.</b>	
Amount transferred from Society's Fund .. ..	412 1 5	Honoraria to Editors .. ..	140 0 0
Royalty on Mg. Kala's Mahayazawin .. ..	131 8 0	Copying fee .. ..	18 5 3
Royalty on Padetha Thigyin .. ..	1 8 0	Stationery .. ..	5 9 0
Royalty on Papsahein Zat .. ..	121 8 0		
Donations .. ..	75 0 0		
	741 10 5		163 14 3
		Cash :—	Rs. A. P.
		At Bank .. ..	3,141-4-8
		In Honorary Treasurer's hand .. ..	15-0-0
			3,156 4 8
<b>TOTAL ..</b>	<b>8,786 1 1</b>	<b>TOTAL ..</b>	<b>8,786 1 1</b>

## APPENDIX B

*Statement of Investments on 31st December 1926.*

1. Government of India 10 years 6 % bonds (pr value) .. ..	Rs. A. P.	4,500 0
2. Post Office Cash Certificates :—		
(i) Nominal value held at end of 1926 .. ..	4,500 0	
(ii) Increment of value of the same (on 31st December 1927) .. ..	1,312 8	5,812 8
(iii) Nominal value of certificates bought during the year .. ..	6,000 0	
3. Fixed Deposits— (Old Deposits) .. ..	1,000 0	7,000 0
(New Deposits) .. ..		
<b>TOTAL ..</b>		<b>17,312 8</b>

## PROCEEDINGS.

## RECEIPTS C (1)

Months.	Members subscription.	Interest Investment	Sale of Journal.	Sale of Glass Palace Chronicle.	Postage recovered.	Govt. Subsidy for dic- tionary Scheme.	Text Publication.		Miscellane- ous.	Total.
							Royalties.	Donation.		
January	Rs. A. P. 810 0 0	Rs. A. P. ..	Rs. A. P. ..	Rs. A. P. 5 0 0	Rs. A. P. ..	Rs. A. P. ..	Rs. A. P. ..	Rs. A. P. ..	Rs. A. P. ..	Rs. A. P. 815 0 0
February	915 0 0	134 11 0	56 0 0	5 0 0	4 14 0	..	..	..	..	1,115 9 0
March	480 0 0	265 0 0	..	..	1 14 0	..	..	..	..	746 14 0
April	60 0 0	..	..	..	..	..	..	..	..	60 0 0
May	120 0 0	..	..	..	0 6 0	..	..	..	..	120 6 0
June	88 1 8	..	..	..	..	..	..	..	..	88 1 8
July	165 0 0	..	56 0 0	..	..	2,500 0 0	..	..	..	2,721 0 0
August	195 0 0	134 11 0	..	..	0 5 0	..	247 11 0	..	..	577 11 0
September	75 0 0	25 0 0	..	..	1 9 0	..	..	450 0 0	50 0 0	201 9 0
October	..	..	..	..	..	..	..	..	..	..
November	30 0 0	..	..	93 8 0	..	..	..	\$25 0 0	..	148 8 0
December	76 14 4	..	..	..	..	..	6 14 0	..	..	83 12 4
Total	3,015 0 0	559 6 0	112 0 0	103 8 0	9 0 0	2,500 0 0	254 9 0	75 0 0	50 0 0	6,673 7 0

\*Mg. Kala's Yazawin  
Padetha Thigyin  
Papabin Zat

Rs. 131-8-0

†Saya Pwa's donation.

1-8-0 §Prof. Pe Mg. Tin's donation.

121-9 0 ¶ Mr. Swithinbank's donation.

## PAYMENTS C (2).

Months.	Clerk's pay.	Peon's pay.	Printing of Journal.	Books Periodicals etc.	Book binding.	Postage stamp.	MISCELLANEOUS.					TEXT PUBLICATION FUND.				Total.
							Printing of forms.	Advertising.	Typing fee.	Stationery.	Continuities.	Subsidy to Dictionary Fund.	Honora-ria to Editors.	Copying fee.	Stationery.	
Rs.	Rs.	Rs.	Rs.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs.	Rs.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	
January	40	17	..	..	..	..	..	..	..	3 8 0	0 8 0	..	..	..	..	61 0 0
February	40	17	394	..	..	65 8 0	5 0 0	12	..	..	3 1 0	..	..	..	..	536 0 0
March	40	17	621	..	..	..	..	15	..	..	0 8 0	625	..	..	..	1,318 8 0
April	40	17	..	..	..	70 0 0	..	16	12 10 0	3 0 0	..	..	..	..	..	158 10 0
May	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
June	80	34	..	..	..	..	7 8 0	..	..	24 4 0	..	..	..	..	..	145 12 0
July	40	17	..	17 14 0	..	..	..	..	2 0 0	..	0 4 0	..	..	..	..	77 2 0
August	40	17	584	..	..	..	..	..	..	..	0 4 0	625	..	..	..	1,266 4 0
September	40	17	..	460 11 3	6 8 0	..	..	10	..	..	3 4 0	..	140	..	..	677 7 3
October	40	17	..	..	32 6 6	..	..	..	1 0 0	..	0 6 0	625	..	18 5 3 5 9 0	..	739 10 9
November	40	17	..	..	..	..	14 8 0	23	..	..	2 12 0	..	..	..	..	97 4 0
December	40	17	..	..	..	68 0 0	..	..	..	13 8 0	1 0 0	..	..	..	..	139 8 0
Total	480	204	1,599	478 9 3	38 14 0	203 8 0	27 0 0	76	15 10 0	44 4 0	11 15 0	1,875	140	18 5 3 5 9 0	5,217 11 0	

(1) Vol. XVI, Pt. II.  
 (2) " XVI, Pt. III.  
 (3) " XVII, Pt. I.

MAHAYAZAWINTHIT.

## LIST OF BOOKS RECEIVED.

### BOOKS PRESENTED BY MRS. WARD.

- Buddhist Essays, by Paul Dahlke, translated from the German by Bhikkhu Silacara.  
The Way to Nirvana, by Poussin  
Buddhist Philosophy in India and Ceylon, by A.B. Keith.  
Essays : Indian and Islamic, by S. Khuda Bukhsh.  
Lays of Ancient India, by R. C. Dutt.  
The Path of Purity, being a translation of Buddhaghosa's Visuddhimagga, by Pe Maung Tin.  
The Study of Patanjali, by Surendranath Dasgupta.  
Compendium of Philosophy, being a translation of the Abhidhammattha-Sangaha, by Shwe Zan Aung.  
The Thirteen Principal Upanishads, translated by R. E. Hume.  
Prolegomena to a history of Buddhist Philosophy, by B. M. Barua.  
A Critical Examination of the Life of Mohammed, by Syed Ameer Ali.  
Dialogues of the Buddha, translated by T. W. Rhys Davids, 2 vols.  
The Travels of Fa-hsien (399-418 A.D.) or Records of the Buddhistic Kingdoms, re-translated by H. A. Giles.  
The Expositor (Atthasalini) 2 vols., by Pe Maung Tin.  
The Questions of King Milinda, 2 vols., translated by T. W. Rhys Davids.  
A Buddhist Manual of Psychological Ethics, translated from Dhammasangani, by Mrs. Rhys Davids.  
The King of the Dark Chamber, by Rabindranath Tagore.  
Religion and Modern India, by Satis Chandra Roy.  
Essays on Chivalry and Romance, by Sir Walter Scott.  
Buddhism in Translations, by H. C. Warren.  
Buddhism Primitive and Present in Magadha and in Ceylon.  
The Renaissance in India, J. H. Cousins.  
Buddhism : a study of the Buddhist Norm, by Mrs. Rhys Davids.  
The Bhagavad-Gita, or the Lord's Song, translated by Annie Besant.  
An Outline of Buddhism or Religion of Burma, by Bhikkhu Ananda M.  
Mahayana-sutralamkara, par Sylvain Levi, Tome II.  
Some Points in Buddhist Doctrine, by Ledi Sadaw.

### BOOKS PRESENTED BY MR. T. COUPER, M.A., I.C.S.

- Les Jeunes Voyageurs en Asie, par P. C. Briand, 4 vols. (1829).  
A Philosophical and Political History of the Settlements and Trade of the Europeans in the East and West Indies, by the Abbe Raynal, 6 vols. (1804).  
Our Burmese Wars and Relations with Burma, by Col. W. F. B. Laurie (1885).  
A Guide to Taxila, by Sir John Marshall (1918)

- Travels in South-Eastern Asia, by Rev. Howard Malcom, 2 vols. (1839)
- Pegu : a narrative of events during the Second Burmese War, by W. F. B. Laurie (1854).
- Indo-China and its Primitive People, by Capt. Henery Baudesson, translated by E. Appleby Holt.
- History of Upper Assam, Upper Burmah and North-Eastern Frontier, by L. W. Shakspear (1914).
- Compendium of Philosophy, by Shwe Zan Aung (1910).
- Journal of a residence in the Burman Empire, by Capt. Hiram Cox (1821).
- The Pali Literature of Burma, by Mabel H. Bode (1909).
- Ralph Fitch, his companions and Contemporaries, by J. H. Ryley (1899).
- Two years in Ava (from May 1824 to May 1826). by an officer on the staff of the Quartermaster-General's Department (1827).
- English Intercourse with Siam in the Seventeenth Century, by John Anderson (1890).
- Researches on Ptolemy's Geography of Eastern Asia, by Col. G. E. Gerini. (1909).
- Lassen's History of Indian Commerce (Vikramaditya to the later Guptas) by Jayaswal and Sastri (1824),
- Memorandum on Four Years' Administration of British Burma, 1867—1871 by Major-General A. Fytche (1871).
- A Sketch of the Services of the Madras European Regiment during the Burmese War, by an officer of the corps (1839).
- Political Incidents of the First Burmese War, by T. C. Robertson (1853).
- The Old Thai Empire, by E. H. Parker (1894).
- Buddhistische Kunst in Indien, von Albert Grunwedel (1900).
- Buddhism and Science, by Dr. R. Ernest.
- A Concise Account of the Kingdom of Pegu, by W. Hunter (1789).
- The Recent Sufferings of the American Missionaries in the Burman Empire (1827).
- The Trade of the East India Company from 1709 to 1813, by F. P. Robinson (1912).
- The Recent Operations of the British Forces at Rangoon and Martaban, by Rev. Thos. T. Baker (1852).
- KORTE GIDS—voor de tempelbouwwallen in de prambananvlakte, het dieng-plateau on gadong sanga, Dr. M. Lulius van Goor (1819).
- Historique Abrege des relations de la Grande-Bretagne avec la Birmanie par Henri Cordier (1894).
- La Mission de Birmanie, par Mgr. Bigandet (1890).
- Histoire de la Conquete de la Birmanie, par M. Camille Imbault-Huart (1878).
- The Travels of Ludovico di Varthema in Egypt, Syria, Arabia and translated by J. W. Jones (1863).
- A Description of the Coasts of East Africa and Malabar in the beginning of the 16th century (1866).

- Far Cathay and Farther India, by Major-General A. R. Mac Mahon (1893).
- The Journal of the Asiatic Society of Bengal, Part II, Extra Number, August 1875—Catalogue of Mammals and Birds of Burma, by E. Blyth (1875).
- The Trade Relations between India and England (1600-1896) by C. J. Hamilton (1919).
- Lehrbucher des Seminars für Orientalische Sprachen zu Berlin, Band XII, 1, 2 (1894).
- Narrative of the Burmese War, by Major Snodgrass (1827).
- Comparative Grammar of the Languages of Further India, by Capt. C. J. F. S. Forbes (1881).
- Legends of the Seven Greatest Pagodas of Burma, Vol. I, Maung Po Ka (1911).
- Adoniram Judson : A Biography, by Edward Judson.
- Personal Narrative of 'Two Years' Imprisonment in Burmah, by H. Gouger (1862).
- The Kingdom and People of Siam, with a narrative of mission to that country in 1855, 2 vols., by Sir John Bowring (1857).
- Arakan : Past-Present-Future, by J. O. Hay (1892).
- The Voyage of John Huyghen van Linschoten to the East Indies (1885). 2 vols.
- Voyage Archeologique en Birmanie et en Messopotamie, par le General L. de Beylie (1907).
- Dictionnaire Bibliographique des ouvrages relatifs à la Péninsule Indochinoise, par Henri Cordier. Vol. I. (1912).
- Indian Shipping : a history of the sea-borne trade and maritime activity of the Indians from the earliest times, by R. Mookerji (1912).
- A Description of the Burmese Empire, by the Rev. Father Sangermano, and translated by William Tandy (1831).
- Travels from India to England ; comprehending a visit to the Burman Empire and a journey through Persia, Asia Minor, European Turkey etc. in the years 1825-26, by J. E. Alexander (1826).
- Peregrinacao de Fernao Mendes Pinto (1762).
- Asia Portuguesa, 3 vols. (1666-1675).
- The International Numismata Orientalia—Coins of Arakan, of Pegu, and of Burma, by Lieut-Genl. Sir Arthur P. Phayre (1882).

BOOKS PRESENTED BY THE ROYAL INSTITUTE OF LITERATURE, ARCHAEOLOGY AND FINE ARTS, BANGKOK, SIAM.

- The Funeral Ceremonies and the Kathin Ceremony as performed by the Annamite Priests.
- Pāsādikasutta : a sermon by the Patriarch Pussadeva of Wat Rajapradisth.
- The Court of Justice in Burma, by Phya Mahā Amātyādhipati.
- Paññasajātaka or the Fifty Births of Buddha translated into Siamese, Vol. X & XI.
- Vongs Devaraj : A Play composed by H. M. King Chulalongkorn, 2 vols.



- Records of the Royal Tours of H. M. King Chulalongkorn in the Malay Peninsula in 1898, 1899 and 1900 A. D.
- A Collection of Chronicles, Vol. XXXII—Documents translated from "Histoire de la Mission de Siam", par A. Launay, Part I.
- The Jataka translated into Siamese, Vol. VI, VII, VIII, IX.
- Cāturangasannipāta : a sermon by Phra Dharmapāṃokkha.
- Letters of H. M. Mongkut, 4th Series.
- Treatise on Military Art (verse).
- A Collection of Chronicles, Vol. XXXIII—First Part of a sermon in Honour of H. M. King Rama III, composed by H. M. King Chulalongkorn.
- Kathākusumamañjari; translated from Sanskrit into Siamese (Proverbs), Part III.
- A Collection of Songs, Part I—Lullabies.
- Cakkavattisutta : a sermon by the Patriarch Pussadeva of Wat Raja pradisth.
- Desanā Ratanattayaparitta—three sermons by the Patriarch Pussadeva of Wat Raja pradisth.
- Sampasadaniyasutta : a sermon by the Patriarch Pussadeva of Wat Raja pradisth.
- The Story of Haris'candra from the Mārkaṇḍeya Purāṇa translated from the Sanskrit.
- Various Comments on the Royal Chronicle of Siam, by Prince Damrong Rajanubhab.
- Records of Various Tours made by H. M. King Chulalongkorn.
- A Collection of Tales, Vol. V—Nanduka Pakaranam.
- Siamese Buddhist Iconography, by H. R. H. Prince Damrong Rajanubhab.
- Vongs Deveraj : a play composed by Hlaung Badhanabongs Bhakti.
- Ancient Siamese Translation of the Hitopadesa.
- Points of Interest Concerning the National Library and the National Museum.
- Siamese Votive Tablets, by Professor G. Coedes.
- The Jataka, translated into Siamese Kalingavagga (Catukkamipata and Terasanipata).
- Orders relating to the Buddhist Community issued during the reign of H. M. King Mongkut.
- The Report of the Vajiranana National Library for the years B. E. 2461-2467.
- Eulogic Poems in honour of H. M. King Chulalongkorn, 3 vols.

## OTHER PRESENTATIONS.

- Dasabhūmikasūtra et Bodhisattvabhūmi, par Le Dr. J. Rahder.
- Bulletin of the International Committee of Historical Sciences, No. 1, October 1926; No. 2, 1927.
- Conception of Buddhist Nirvana, by Th. Stcherbatsky.
- Die Sammlungen aus Hinterindien und Assam in Besitze des Museums für Völkerkunde in München, Von Dr. R. Heine-Geldern.

- Anthology of Burmese Literature, Vol. II, 2 copies.  
 Buddhist India, Vol. I, No. 3.  
 U Ponya Vatthu Baung-gyok.  
 Antiquities of Indian Tibet.  
 France and Tongking, by J. G. Scott (presented by Mr. Swithinbank.)  
 Descriptive Catalogue of Sanskrit MSS in the Government Oriental  
 Manuscript Library, Madras.  
 The Bakhshali Manuscript: a study in Mediaeval Mathematics, by G. K.  
 Kaye.  
 The Chalukyan Architecture of Kanarese District.  
 Annual Bibliography of Indian Archaeology for 1926 issued by Kern  
 Institute Leyden.  
 Catalogue of Home Miscellaneous Series of the India Office Records,  
 by Hill.

## RESEARCH BOOKS (PURCHASED).

- De Schagintweit—Bouddhisme au Tibet.  
 Fournereau—Le Siam Ancien (2nd part only).  
 Etudes Asiatiques—2 vols.  
 Adhémard Leclère—Cambodge. Fêtes Civiles et religieuses.  
 Le Lalita Vistara—traduit par Ph. Ed. Foucaux, Parts I & II.  
 Lefèvre Pontalis—Recueil de Talismans Laotiens.  
 L. de Milloué—Bod-Youl on Tibet.  
 Les Livres Sacres du Cambodge—par Adhémard Lecolère.  
 J. Przyluski—La Légende de l'Empereur Acoka.  
 H. Kern—Histoire du Bouddhisme dans l'Inde Tome 2.  
 Anesaki—Quelques pages de l'histoire religieuse du Japon.  
 P. Lefèvre Pontalis—Notes sur des amulettes Siamaises.  
 L. de Milloué—Bouddhisme.  
 Stcherbatsky—La Théorie de la Connaissance et la Logique chez les  
 Bouddhistes tardifs.  
 Ferrand—Voyage du Marchand Arabe Sulayman, 851.  
 Bacot—Trois Mystères Tibétains.  
 „ —Milarépa.  
 „ —Les Entretiens de Nang Tantrai.  
 Katsourô Hara—Histoire du Japon.  
 Wieger—Narrations populaires.  
 Barth & Bergaigne—Inscriptions sanscrites du Campa et du Cambodge,  
 2 vols. 2 atlas.  
 Hackin—Formulaire sanscrit-tibétain du Xe Siècle.  
 Hovelacque—Le Japon.  
 „ —La Chine.  
 D. Sylvain Lévi—Dans l'Inde.  
 Madrolle—Quelques peuplades Lolo.  
 A. Roussel—Le Bouddhisme Primitif.  
 „ —Le Bouddhisme Contemporain.  
 Masson—Oursel—Esquisse d'une histoire de la Philosophie indienne.

- G. Margoulies—Le Kou-Wen Chinois.  
 „ —Le “Fou” dans la Wen-siuan.  
 Foucaux—Grammaire tibétaine.  
 Dourisboure—Les sauvages Ba-Hnars.  
 Wilson—Burmese War.  
 Bibliotheca Indosinica, Vol. II.  
 Paul Vial—Les Lolos.  
 Barbier—Dictionnaire Annamite-Français  
 Français-Annamite.  
 Pali Text Society—Mahāvamsa, transl. by Gieger.  
 Whitehead—In the Nicobar Islands.  
 Kingdon Ward—In farthest Burma.  
 White—The Sea Gypsies of Malaya.  
 Hutton—The Angami Nagas.  
 Judson—Burmese-English Dictionary.  
 „ English-Burmese Dictionary.  
 Rawlinson—Intercourse between Indian and the Western World.  
 Sewell and Dikshit—The Indian Calendar.  
 Irwin—Burmese and Arakanese Calendars.  
 Kingdom Ward—Land of the Blue Poppy.  
 Sir John Bowring—The Kingdom and People of Siam, 2 vols., 1857.  
 Capt. Seauve—Les Relations de la France et du Siam.  
 M.P. Charlesworth—Trade Routes and Commerce of the Roman  
 Empire.  
 Reginald le May—An Asian Arcady.  
 Hutton—The Sema Nagas.  
 Shakuntala—Everyman's Library.  
 Monier-Williams—Sanskrit-English Dictionary.  
 Couvreur—Les Quatre Livres.  
 Mills—The Ao Nagas.  
 Ward—The Mystery Rivers of Tibet.  
 Hirth—Ancient History of China.  
 Gowen and Hall—Outline History of China.  
 Laufer—Dokumente der Indischen Kunst.  
 „ Der Roam einer Tibetischen Königin.  
 Couvreur—Guide to conversation in French, English and Chinese.  
 Sewell—Indian Chronography.  
 Finot—Les Inscriptions du cirque de Mison (Notes d'épigraphie XI)  
 „ Notes d'épigraphie.  
 Wickremasinghe—Epigraphia Zeylanica, Vol. I, Parts V-VI; Vol. II  
 Parts I.-V.  
 Richard—Comprehensive Geography of the Chinese Empire  
 Stanislas Millot—Dictionnaire des Formes Cursives Chinoises  
 Aymonier—Dictionnaire Français-Cambodgien  
 Barth—Les Doublets de la Stèle de Say-Fong  
 Coedes—L'Inscription de Baksei Camkron  
 „ —La Stèle de Ta-Prohn  
 „ L'Inscription de Bhavavaraman II, roi de Cambodge

- Finot---Notre transcription du Cambodgien  
 „ Notes d'Epigraphie I  
 „ Notes d'Epigraphie VII, VIII, IX et X  
 „ Notes d'Epigraphie II-IV (1 Fascicule)  
 „ Notes d'Epigraphie V, VI, XIII, XIV-XX (4 Fascicules)  
 „ Bas-Reliefs de Bapuon  
 Coedes—Inscriptions de Bât Cum  
 „ Stèle de Tép Pranam  
 „ Vat Thipdei  
 „ Inventaire des inscriptions de Champa et du Cambodge  
 Aymonier—Les Inscriptions du Preah Peân  
 „ Les Inscriptions du Bakan et la grande inscription d'Angkor Vat  
 „ La Stèle de Sdok Kâk Thom  
 „ Première Etude sur les inscriptions tchames  
 „ Les Inscriptions Modernes d'Angkor Vat  
 „ Les Tchames et leurs religions  
 „ Quelques notions sur les inscriptions en Vieux khimer  
 Azèmar—Les Stiengs de Bro'lam  
 Dourisboure—Dictionnaire Bahnar-Français  
 Weiger—Caractères Chinois  
 Lorgeou—Grammaire siamoise  
 Emile Rocher—La Province Chinoise du Yunnan, 2 vols.  
 Pali Text Society—Pali Dictionary, 8 parts  
 R.J. Wilkinson—Malay-English Dictionary, 2nd Ed, Abridged, 1919  
 Winstedt—English-Malay Dictionary, 1922, 2nd Revised Edition  
 Wood—History of Siam  
 Buddhist Legends, 3 vols., Harvard Oriental Series  
 Warren—Buddhism in Translations  
 Rhys Davids—Buddhist Birth Stories  
 Cartwright—Siamese-English Dictionary  
 Siamese Handbook  
 Cuaz—Dictionnaire Français-Siamois  
 Guignard—Dictionnaire Laotien-Français  
 Finot—Corpus des Inscriptions du Cambodge ç 2 tomes de planches  
 Guesdon—Dictionnaire Cambodgien Français ç the first 4 fascicules  
 Wieger—Texts historiques, 2 vols and 1 vol of Carters  
 Harvey de St. Denys—Ethnographie des peuple étrangers à la Chine  
 Variétés Sinologiques. No. 8—Allusions Littéraires by Pétillon 1st. Fascicule  
 No. 13—Pétillon, 2nd, fascicule  
 No. 24—Concordance des Chionois by Nathia Tchang  
 No. 29—Synchronismes Chronologies nèoméniques  
 by P. Hoang  
 Granet—Danses et Légendes de la Chine Ancienne, 2 vols.  
 Chavannes—Mémoires historiques de Se-ma Ts'ien. Tomes IV et V.  
 Pallegoix—Dictionarium linguae Thai (in Latin, French, English and  
 Siamese)  
 Chau Ju-kua's Chu-fan-chih, transl. by Hirth and Rockhill, Text and  
 translation

A. Wylie—Notes on Chinese Literature, Shanghai 1902  
 Skeat Blagden—Pagan Races of the Malay Peninsula, 2 vols  
 Bode—Pali Literature of Burma

## BY EXCHANGE.

Bulletin des Amis du Vieux hue, 1926, 1927 and 1928.  
 Mitteilungen der Anthropologischen Gesellschaft in Wien, L VII Band  
 II, III, IV Heft.  
 Djawa (Journal of Java Institute,) 1926-1927.  
 Indian Antiquary, March 1927 to June 1928.  
 Journal of Royal Anthropological Institute of Great Britain and Ireland,  
 Vols. LVI and LVII.  
 Man in India, Vol. VII, 1927.  
 Zeitschrift für Indologie und Iranistik, Band 5, 6, 7.  
 Journal of East India Association, Vol. XIII, 4 parts; Vol. XIX, 3 parts.  
 Journal of Royal Asiatic Society of Great Britain and Ireland, 1927, 3  
 parts, 1928, 2 parts  
 Bulletin of the School of Oriental Studies London Institution, Vol. IV,  
 Parts 3 and 4  
 Journal Asiatique Tome CCIX No. 1, 2; CCX No. 2; CCXI No. 1.  
 Journal and Proceedings of Asiatic Society of Bengal, Parts for Vols. XXI,  
 XXII.  
 Bulletin of applied Botany of Genetics and Plant Breeding, Parts for  
 Vols. XVII and XVIII.  
 T'Oung Pao, 1927, Nos. 3, 4; 1928, No. 5.  
 Annals of the Bhandarkar Oriental Research Institute, Vol. VII, Part IV.  
 Malayan Branch of R. A. S. Journal, Vol. IV, Part 3; Vol. V, Parts 1, 2, 3.  
 Bulletin de L'Ecole Française d'Extrême-Orient, Tome XXVI—1926.  
 Journal of the Siam Society, Vol. VII Part 1, 2; Vol. XXI, Part 2.  
 Arts et Archéologie Khémers, Vol. II, 1926, Fascicule 3  
 Annual Report on South Indian Epigraphy for year 1925-26  
 Oudheidkundig Verslag, 1926.  
 Wir Menschen der indonesischen Erde Von Renard Brandstetter-V.  
 Das Herz des Indonesiers  
 The Best Varieties of the Spring Wheats, V. V. Talanoff  
 Guide to the Qutub, Delhi  
 La Bayon d'Angkor et l'Évolution de l'Art Khmer, by P. Stern  
 Bulletin de la Maison Franco-Japonaise, Série Française, I  
 Memoirs of the Archaeological Survey of India—  
 No. 30—The Beginning of Art in Eastern India with special  
 reference to Sculptures in the Indian Museum Calcutta,  
 by R. Chanda  
 No. 32—Fragment of a Prajñāpāramitā Manuscripts from Central  
 Asia, by B. B. Bidyabhinod  
 Archaeological Survey of India Annual Report 1924—25  
 Memoirs of the Archaeological Survey of India—  
 No. 25—Bas-reliefs of Badami, by R. D. Banarji

## LIST OF MEMBERS (Dec. 31st, 1927.)\*

\*Life member.

†Corresponding member.

‡Honorary member.

- \*Adamson, Sir Harvey, c/o India Office, London.  
 Aiyar, N. C. Krishna, M.A., Prof., University College, Rangoon.  
 Aung, U Shwe Zan, B.A., A.T.M., K.S.M., No. 5, Innes Road, Kemmendale.  
 Aung, U Tha Tun, B.A., Additional District and Sessions Judge, Pegu.  
 Aung, U Kyaw Za, S. D. O., Kyauktaw (Akyab District).  
 Aung, U Lun, Myook, Paungdè, (Tharrawaddy).  
 \*Ba, U, A.T.M., Income-tax Assessor, Mandalay.  
 Ba, U, The Hon'ble Mr. Justice, Judge, High Court, Rangoon.  
 Bah, U, Rice Miller, Payagale-upon-Kyaiklat Stream, Kyaiklat.  
 \*Ban, U Shwe, *Bar-at-Law*, 15, York Road, Rangoon.  
 Barretto, Miss E., Principal, Victoria Buddhist Girls' School, 57, Canal Street, Rangoon.  
 Baw, U Hla, I.S.O., K.S.M., District and Sessions Judge, (retired) Bassein.  
 Baw, U Htoon, Banker, Akyab.  
 Bazett, H. M., S. D. O., Kawkareik, Amherst.  
 Bhimani, A. R., Proprietor, Gujarat Press, No. 6, Maung Tawlay Street, Rangoon.  
 Bhyameah, H. M. E., 151, Monkey Point Road, Rangoon.  
 Bishop, F., Government Press, Rangoon.  
 †Blagden, Dr. C. Otto., School of Oriental Studies, Finsbury Circus, London, E. C. 2.  
 Bose, S. C., Chief Executive Officer, Calcutta Corporation.  
 Brookes, A., I.E.S., University College, Rangoon.  
 Brough, Joseph, Secretary, Y. M. C. A., Central Branch, Rangoon.  
 \*Brown, G. E. R. Grant, c/o Messrs. Thomas Cook & Son, Ltd., London.  
 Brown, The Hon'ble Mr. Justice H. A., I.C.S., *Bar-at-Law*, Judge, High Court, Rangoon.  
 Brown, R. R. I.C.S., Commissioner, Arakan.  
 Browne, C. E., I.S.O., Loi-an, Kalaw, S. S. S.  
 Bu, The Hon'ble U Mya, *Bar-at-Law*, Judge, High Court of Judicature, Rangoon.  
 Bu, U San Shwe, Teacher, Govt. High School, Akyab.  
 Bush, S. P., Govt. Architect, Secretariat, P.W.D., Rangoon.  
 Butler, Sir Spencer Harcourt, G.C.I.E., K.C.S.I.  
 Buttress, E. W., B.A., B.E.S., Offg. Inspector of Schools, Akyab.  
 Bwa, U Ba, Excise Inspector, Bassein.

---

\* Members are particularly requested to inform the Hony. Secy. of any change in their address.

- †Cædes, G., President, Siam Society, Bangkok, Siam.  
 Campbell, A., M.A., M.C., University of Rangoon.  
 \*Carr, The Hon'ble Mr. Justice W., I.C.S., Judge, High Court of Judicature, Rangoon.  
 \*Carroll, E. W., Imperial Forest Service, c/o Messrs. Thomas Cook & Son, Ltd., Rangoon.  
 Cassim, A., B.A., Pali Lecturer, University College, Rangoon.  
 Cassim, M., Head Master, Govt. Normal School, Akyab.  
 \*Chit, U Po, A.T.M., S. D. O., Meiktila.  
 Cho, U E, Govt. Translator, Secretariat, Rangoon.  
 Clague, J., B.A., I.C.S., Secretary to Govt. of Burma, Education Dept.  
 Clark, Dr. G. F., M.A., Ph.D., Professor, University College, Rangoon.  
 Clayton, H., M.A., I.C.S., C.I.E.  
 Cleburne, J. St. H., Deputy Commissioner and District Superintendent of Police, Papun.  
 \*Cochrane, R. A., Divisional Forest Officer, Katha.  
 Collis, M. S., B.A., I.C.S., Deputy Commissioner, Hanthawaddy.  
 Connor, J. P., Addl. Asst. Director of Land Records, Burma.  
 Cooper, C. R. P., Secy. to Govt. of Burma.  
 Cooper, R. E., Superintendent, Agricultural Society of Burma, Rangoon.  
 \*Couper, T., M.A., I.C.S., Financial Commissioner, Burma.  
 †Craddock, The Hon'ble Sir Reginald Henry, K.C.S.I., I.C.S.  
 \*Cuffe, Lady, "Leyrath" Kilkenny, Ireland.  
 Cummings, Rev. Dr. J. E., M.A., D.D., Henzada.  
 Danson, J. W. W., Minera Hall, near Wrexham, North Wales.  
 Darne, Rev. Father A., Military Chaplain, Roman Catholic Cathedral, Mandalay.  
 Darwood, J. W., 77, Merchant Street, Rangoon.  
 Davis, C. K., Deputy Commissioner, Ma-ubin.  
 Dawson, L., *Bar-at-Law*, Pyapon.  
 de Silva, Thos. P., c/o Messrs. Harperink, Smith & Co., Rangoon.  
 Doe, U Ah, *Bar-at-Law*, Akyab.  
 \*Drysdale, Rev., J. A., M.A., Morpeth, Northumberland.  
 Dun, U Kyaw, K.S.M., Nyaungwaing Road, Thaton.  
 Dunn, C. W., B.A., I.C.S., C.I.E., 27, Windermere Park, Rangoon.  
 Duroiselle, Ch., M.A., Superintendent, Archaeological Survey, Mandalay.  
 E, U Ba, B.A., A.T.M., K.S.M., Provincial Training Officer, Rangoon.  
 \*E, Khoo Soo, Merchant, 3A, 23rd Street, Rangoon.  
 E, U Tun, Taikthugyi of Tamwe Circle, 50, 51st Street, Rangoon.  
 Elgood, Major, W. N., M.C., B.Sc., I.E.S., Prof., University College, Rangoon.  
 Enriquez, Major C. M., c/o Messrs. Thos. Cook & Son, Ltd., Rangoon.  
 Ewing, Capt. R. R., I.A., c/o Messrs. A. Scott & Co., Rangoon.  
 Fraser, W. G., M.A., University College, Rangoon.  
 \*Furnivall, J. S., M.A., I.C.S., Burma Book Club, University College, Rangoon.  
 Fyffe, The Right Rev. R. S., Bishop of Rangoon.  
 Gale, U Maung, Deputy Commissioner, (Retired).  
 Gale (6), U Maung, Additional District and Sessions Judge, Bassein.



- Gale, U Maung, Subdivisional Police Officer, No. 235, Taungkon, Sangyaung, Kemmendine, Rangoon.
- Gates, G. E., Judson College, Rangoon.
- Gaudoin, E. T. D., B.A., Assistant Superintendent, Shwegu (Bhamo).
- Ginwala, P. P., *Bar-at-Law*, Member of Tariff Board, India.
- Glay, U Lu, Dy. Superintendent of Police, Thaton.
- Goldsworthy, L. G., I.E.S., Lecturer, University College, Rangoon.
- Gon, U Ba, Superintendent, Copying Department, High Court, Rangoon.
- \*Grantham, S. G., B.A., I.C.S., Secretariat.
- Green, Capt. J. H., I.A., Kachin Unit, Maymyo.
- Green, Lieut.-Col. G. E. T., 3, Kalaw, S.S.S.
- Gyi, The Hon'ble Sir Joseph A. Maung, *Bar-at-Law*, Home Member, Govt. of Burma.
- Gyi, U Maung, Excise Inspector, Eastern Circle, Mandalay.
- Gyi, Maung Maung, Superintendent of Land Records, Pegu.
- Gyi, Maung Maung, M.R.A.S., Inspector of Excise, Mandalay.
- Hall, Prof. D. G. E., M.A., F.R.Hist.S., I.E.S., University College, Rangoon.
- †Halliday, Rev. R., "Mount Pleasant", Moulmein.
- Han, U Kyin, T.D.M., Deputy Superintendent of Police (retired), 21, Creek Street, Rangoon.
- Hanson, Rev. O., D.D., A. B. Kachin Mission, Bhamo.
- Harvey, G. E., M.A., I.C.S., Lashio, N. S. S.
- Hashim, M., Calico Expert, 90-91, Merchant Street, Rangoon.
- Heath, C. J., Dy. Commissioner of Police, Rangoon.
- Henderson, H. I. P., c/o Bombay Burma Trading Corporation Ltd., Saw.
- Hendry, D., M.C., B.Sc., Dy. Dir. of Agriculture, Burma.
- Hertz, W. A., "The Rookery," Dunburg-on-Thames, England.
- Hindley, Gordon, c/o Messrs. Steel Bros. & Co., Ltd., Toungoo.
- Hla, U, B.A., Hd. Quarters Asst., Myingyan.
- Hla (1), U Aung, B.A., District and Sessions Judge, Henzada.
- Hla, U Ba, Officer-in-charge, Special Surveys, Burma, Shwebo.
- Hla, U Kyaw Zan, 1st Additional District Judge, Mandalay.
- \*Hlaing, U Po, Township Officer, Tilin (Pakokku).
- Hogg, J., M.L.C., Messrs. Harperink, Smith & Co., Rangoon.
- Howard, R. L., Judson College, Rangoon.
- Htin, Saw Chin, B.A., Offg. Inspector of Schools, (on furlough.)
- Htoon, U Tha, Banker, Rupa Quarter, Akyab.
- Hunter, Sir John Mark, M.A., D.Litt., I.E.S., Woodleigh, Ascot, England.
- †Hunter, M., M.A., D.Sc., C.I.E., c/o Messrs. Thos. Cook & Son, Ltd., London, E. C.
- Hutton, J., Inspector of Police, Katha.
- I, U Maung, Additional District and Sessions Judge, Magwe.
- Jevons, Prof. H. S., M.A., F.S.S., University College, Rangoon.
- Jones, Rev. B. M., 27, Creek Street, Rangoon.
- Josif, Rev. Geo. D., M.A., 15, Mission Road, Rangoon.
- Jury, Rev. G. S., Judson College, Rangoon.
- Kan, U., Additional Magistrate, Tavoy.



- \*Karpeles, Mademoiselle Suzanne, Conservateur de la Bibliothèque Royal, Phnom Penh, Indochina, Cambodia.
- Kay, R. G., Engineer, c/o Messrs. Ellerman's Arracan Rice Mills, Burma 5 and 6 Billiter Avenue, London, E. C.
- Keith, The Hon'ble Sir Wm. J., M.A., I.C.S., Finance Member, Govt. of Burma.
- Kelly, B. P., Deputy Conservator of Forests, Mawlaik.
- Khalak, A., St. John's College, Rangoon.
- Khin, Capt. H. Aung, c/o Messrs. Thos Cook & Son, Rangoon.
- Kin, U Tha, Advocate, 404, Dalhousie Street, Rangoon.
- Kin, U Thein, B.A., A.T.M., F.C.S., Chemist, Harcourt Butler's Institute of Public Health, Rangoon.
- \*Ko, Taw Sein, C.I.E., "Peking Lodge," West Moat Road, Mandalay.
- Ku, U Maung, Additional Magistrate, Nyaunglebin.
- Kya, U Ba, B.A., Assistant Pali Lecturer, University College, Rangoon.
- Kyaw, U, B.A., Assistant Registrar, Co-operative Societies, Moulmein.
- Kyaw (2), U Ba, K.S.M., *Bar-at-Law*, 8, Link Road, Insein.
- Kye, U Po, Subdivisional Officer, Mawlaik, Upper Chindwin.
- Kyin, K. Maung, Manager, Ma Nu & Sons, Merchants and Landlords, Bazaar, Prome.
- Kywe (1), U Circle Inspector of Police, Zigon.
- \*Lack, Major L. H. A., I.M.S., Lecturer, University College, Rangoon.
- Lander, A. J. M. I.C.S., o/o Messrs. A. Scott & Co., Rangoon.
- Lat, U, Asst. Registrar, Co-operative Societies, Henzada.
- Latt, U Ba Pe, Superintendent, S. I. Thippan Institution, Pazundaung.
- Leal, W. P., Mining Engineer, Tavoy.
- Lees, L. M., I.C.S., Deputy Commissioner, Pyapon.
- Lightfoot, S. St. C., Taunggyi.
- \*Lin, U We, B.A., K.S.M., I.E.S., Inspector of Schools, (on furlough).
- List, J. N., Executive Engineer, Akyab.
- Livesey, Capt. T. R., B.A., M.B., O.U., Loikaw, Karenni, S. S. S.
- \*Llay, U Shwe, Kado Rubber Estate, Kado, Moulmein.
- Lloyd, I. G., B.A., I.C.S., Commissioner, Magwe.
- \*Luce, G. H., B.A., I.E.S., University College, Rangoon.
- Lwai, W. A., Toll Collector, Myitkyo Lock, Pegu & Sittang Canal, Myitkyo (Pegu District).
- \*McCallum, J. L., I.C.S., Commissioner, Federated Shan States.
- MacKenna, Sir James, M.A., C.I.E., Kt., Development Commissioner Burma (on furlough).
- McPhredran, Arch., Works Assistant, c/o B. O. C., Ltd., Danneedaw, Rangoon.
- Mariano, V. J., *Rangoon Gazette*, Rangoon.
- Marshall, Rev. H. I., "Seminary Hill", Insein.
- Marshall J. B., M.A., B.S.C., C.I.E., I.C.S., (Excise Commissioner, Burma)
- Martin, U, Deputy Inspector of Karen Schools, Toungoo.
- Massink, W., Consul for the Netherlands, P. O. Box. 119, Rangoon.
- Mathew, H. M., Messrs. Steel Bros., Rangoon.

- Maung, U Maung, Superintendent, Office of Supdg Engr., Northern Irrigation Circle, Maymyo.
- Maung, U Maung, A.T.M., Offg. Inspector of Schools, Insein.
- Maung, U Chit, E. A. C., Headquarters Assistant, Hanthawaddy.
- Maung, U E. M.A., LL.B., *Bar-at-Law*, Gyogon, (Insein).
- Maung, Lieut. Kin, 5/70 Burma Rifles, Maymyo.
- Maung, U Sein, Township Judge, Tantabin.
- \*Maung, U Thein, Retired Myook, Aukyin Quarter, Thaton.
- Maung, U Thein, M.A., LL.B. *Bar-at-Law*, 126, Barr Street, Rangoon.
- Maung (2), U Thein, Treasury Officer, Pyapon.
- Maung, U Thein Teacher, Govt. High School, Pyapon.
- \*Maung, U Tso, T.P.S., F.R.C.I., Broker, Ellerman's Arracan Rice & Trading Co., Ltd., Bassein.
- Maung, U Tun, Junior Assistant Resistrar, Co-operative Societies, Monywa.
- Maung, (2), U Tun, B.A., Akunwan, Toungoo.
- \*Maye, Rev. Joseph, Catholic Missionary, Mergui.
- \*Me, U, K.S.M., C.I.E., Additional District Magistrate, Tharrawaddy.
- Meggitt, Prof. F. J., M.Sc. Ph. D., University College, Rangoon.
- Milner, C. E. Deputy Conservator of Forests, Moulmein.
- Min, U Kyaw, B.A., I.C.S., Under Secretary to Govt., Finance Dept.
- \*Mong, Saw Hkun, *Myoza* of Mong Kung States Southern Shan States.
- Moore, H. C., B.A., I.C.S., 26, Mingaladon Road, Insein.
- Morris, A. R., I.C.S., Deputy Commissioner, Tavoy.
- Morris, A. P., B.Sc., A.M. Inst. C.E., Principal, Govt. Engineering School, Insein.
- Mukerjee, H. C., B.E., Subdivisional Office, P. W. D., Pa-an.
- Munro, G. F., I.E.S., Inspector of Schools, Rangoon.
- Myaing, U Ba, Asst. Govt. Translator, Secretariat, Rangoon.
- Myat, U Tun, T.D.M., 3rd Additional. Magistrate, Bassein.
- Myint, U Aung, E. A. C., Tharrawaddy.
- Naikwara, Md. Usooff, Merchant, 52, Maung Taulay Street, Rangoon.
- Nepean, N. St. V., Assistant Superintendent, Namtu. Northern Shan States.
- Nolan, J. J., c/o Chartered Bank of India, 38, Bishopsgate, London, E. C. 2.
- Nolan, Capt. M. C. 10/20 Burma Rifles, Maymyo.
- Nu, U San, Circle Inspector of Police, Sagaing.
- Nyein, (1), U A.T.M., Subdivisional Magistrate, Mandalay.
- \*Nyun, U San, Hony. Magistrate, Pegu.
- O, U Kyi, B.A., A.T.M., K.S.M., Superintendent of Land Records (retired) Thaton.
- Oates, S. J., Thindawyo Camp, Hmawbi.
- \*Ogilvie, G. H., B.Sc., M.C., Divisional Forest Officer, Myitkyina.
- Osborn, Dr. H. B., 19, Sule Pagoda Road, Rangoon.
- Ottama, Rev. Bhikkhu U, Tattawin Kyaung, Kamayut.
- Oung, U Ba, Inspector of Police, on special duty, Fytche Road, Bassein.
- Oung, Mrs. Hla, 3A, Pagoda Road, Rangoon.

Oung, Chan Htwan, Pleader, Akyab.

Owen, L. G., M.A., University College, Rangoon.

\*Page, A. J., B.A., I.C.S., c/o Barclay's Bank, Ltd., 78, Victoria Street  
London, S. W. 1.

Paik, U, Deputy Superintendent of Police, Tharrawaddy.

Pan, U, Sub-Registrar, Gyobingauk.

Pe (2), U, Subdivisional Officer, Magwe.

Pe, U Ba, Myook, Yamethin.

Pe, U Hla, Pleader, Prome.

Pe, U Hline, Sub-Asst. Surgeon, Konglu (outpost), Putao District.

\*Pe, U On, "Rosebank", Cantonments, Moulmein.

Pe, U On, B.A., B.L., Pleader, Myaungmya.

Pe, U Po, K.S.M., Deputy Commissioner (retired), Wakema.

Pe, Saya, 18, Sule Pagoda Road, Rangoon.

Pe, U Than, Junior Assistant Registrar, Co-operative Societies, Myaungmya.

Pe, U Tun, M.A., B.L., M.R.A.S., Lecturer, Judson College, Rangoon.

Peacock, D. H., I.E.S., Professor, University College, Rangoon.

Pearn, B. R., Lecturer, University College, Rangoon.

Pelly, Major H. R., I.A., Deputy Commissioner, Bassein.

\*Pennell, C. S., M.A., M.C., I.C.S., c/o Grindlay & Co., 54, Parliament  
St., London, S. W. 1.

Perroy, The Right Revd. Bishop Vicar Apostolic of Southern Burma.

Petch, D. B., B.A., M.C., I.C.S., Deputy Commissioner, Monywa.

Po, U Ba, Hd. Quarters Magistrate, Pakokku.

Porter, A. W., Assistant Superintendent., Fort Harrison, Sadon.

Powell, Capt. J. H., Agent, Irrawaddy Flotilla Co., Ltd., Bhamo.

Pru, U Saw Hla, B.A., B.L., Secy. to Financial Commissioner, Burma,  
(Transferred Subjects.)

Purser, Rev. W. C. B., Principal, St. Michael's S. P. G. School, Kem-  
mendine.

Pwa, Sya, Burmese Tutor, University College, Rangoon.

\*Reddiar, *Rao Sahib* S. Ramanatha, 63, 32nd Street, Rangoon.

Reynell, C. A., Deputy Inspector-General of Police, Southern Range,  
Rangoon.

Reynolds, H. O., I.C.S., Secretary to Govt. of Burma, Dept. of Agriculture,  
Excise &c.

Reynolds, J. T. C., Superintendent of Excise, Pegu.

Robbin, U, Deputy Inspector of Schools, Myitkyina.

\*Roberts, Major A. B., Deputy Commissioner (retired).

Robertson, L. C., 21, Boundry Road, Rangoon.

Robertson, J. P. W., P. A. to D. I. G. of Police for Railways & C. I.D.,  
Burma

Rodger, A., O.B.E., President, Forest Research Institute & College, Dehra  
Dun.

Rollo, W. Smith, Agricultural Engineer to Govt., Mandalay.

Ross, Dr. G. R. T., M.A., D. Phil., University College, Rangoon.

Roy, M. K., Pleader, Pyapon.

- Russell, Rev. Maurice H., Wesleyan Methodist Mission, Mandalay.  
 Rutledge, The Hon'ble Sir Guy, M.A., *Bar-at-Law*, Chief Justice, High Court of Judicature, Rangoon.  
 St. Guily, The Very Rev. Father, "Clergy House" Judah Ezekiel Street, Rangoon.  
 Salarak, Phra Phraison, Siamese Agent & Forest Officer, Commissioner Road, Moulmein.  
 Saung, U Po, Pleader, Toungoo.  
 Saw, H. Po., B.A., 4, 45th Street, Rangoon.  
 Scott, G. E., East India United Service Club, 16, St. James Square, London, S. W.  
 Searle, H. F., B.A., I.C.S., Joint Registrar, Co-operative Societies, Rangoon.  
 \*Sein, U Ba, Asst. Engineer and Statistical officer, Burma Railways.  
 Sein, Ma Mya, 2, Pagoda Road, Rangoon.  
 Sein, U Po, A.T.M., Deputy Inspector of School, Rangoon.  
 \*Seppings, F. H., 54, Innes Road, Kemmendine, Rangoon.  
 \*Set, U E.A., Deputy Accountant-General, Burma.  
 Sewell, Lieut.-Col. J. H., 6, Bagaya Phoongyee Road, Kemmendine.  
 Shaw, J., Assistant Superintendent, Namhsan, N. S. S.  
 Shein, U Ba, Pleader, Pyapon.  
 Shields, D., Head-master, St. Luke's School, Toungoo.  
 Shin, U Ba, Judicial Minister, Yawnghwe State, S. S. S.  
 Shwe, U San, F.R.G.S., 64, Creek Street, Rangoon.  
 Sin, U Po, E. A. C. (retired), Bazaar Street, Prome.  
 Sloss, D. J. C.B.E., Principal, University College, Rangoon.  
 Smith, J. R. Baird, Irrawaddy Flotilla Co., Ltd., Rangoon.  
 \*Smith, H., Tabdun House, Kuching, Sarawak.  
 Smyth, W. J. B.A., I.C.S., Deputy Commissioner, Sandoway.  
 \*Snow, C. A. M.A., Director of Public Instruction, Burma.  
 Stamp, Dr. L. D., B.A., D.Sc., F.G.S.; London School of Economics and Political Science, London, W. C. 2.  
 \*Stewart, J. A., M.A. M.C., I.C.S., Commissioner, Magwe.  
 Street, W., Deputy Commissioner, Henzada.  
 †Stuart, J., Ivy Bank, Liberton, Midlothian, Scotland.  
 Su, Maung, c/o Prof. Rathstein, Pariser Str., 3, Berlin, W. 15.  
 Su, U, *Bar-at-Law* China Street, Mandalay.  
 Sulaiman, Meer, M. A., 69, 26th Street, Rangoon.  
 Surty, C. M. Merchant, 45, Park Road, Rangoon.  
 Sutherland, C., S. D. O., Thayetmyo.  
 \*Swan, U Boon, Pleader, Pyapon.  
 Swe, (2) U Ba, B.A., S. D. O., Kyauktan.  
 Swe, U Chit, Junior Assistant Registrar, Co-operative Societies, Mandalay.  
 \*Swithinbank, B. W., I.C.S., Deputy Commissioner, Pegu.  
 \*Symns, J. M., M.A., I.E.S., Assistant Director of Public Instruction, Burma.  
 Tapa, James, M.A., Lecturer, Judson College.  
 \*Taylor, L. F., B.A., I.E.S., Research Lecturer, University College, Rangoon.  
 Te, Rev. Ba, A. B. Mission, Taunggyi, S. S. S.

- † Temple, Sir Richard Carnac, Bt., C.B., C.I.E., F.S.A., c/o Messrs. H. King & Co., 9, Pall Mall, London, S. W.
- Teong, Taw Sone, B.A., B.Ag., Superintendent, Agricultural Farm Mandalay.
- Tha, U Ba, B.A., Treasury Officer & Headquarters Magistrate, Magwe.
- Tha, U Po, Asst. Lecturer, University College, Rangoon.
- Tha, Capt. R. R. H. O., I.M.S., c/o Messrs. A Scott & Co., Rangoon.
- Tha, U (2), Shwe, K.S.M., Maymyo.
- Than, U Aung, B.A., Subdivisional Officer, Pyu
- Than, U Ba, Township Officer, Thabaung
- The, U Po, Additional District Magistrate, Moulmein.
- Thein, U Ba, B.Sc., B.A., B.L., 72A, Phayre Street, Rangoon.
- \*Thein, Saya, Hmawbi (Insein).
- Thi, U Ba, Income-tax Officer, Rangoon.
- Thin, U, Pleader, Pyapon.
- Thin, U Ba, Deputy Commissioner, Minbu.
- Thin, (2), U Po, E. A. C., on leave, 529, Tavoyzoo, Moulmein.
- Thin, (1), U Po, K.S.M., A.T.M., E. A. C. of Forest, Naba (Katha).
- Thin, U Po, Deputy Superintendent, Civil Veterinary Department, Sagaing.
- Thon, U Po, B.A., Assistant Lecturer in Mathematics, University College, Rangoon.
- Thoo, U San, Rice Miller, Honorary Magistrate, Kwelwe, (Myaungmya.)
- Thwin, J. B., R.A., Treasurer, 121, Strand, Ma-ubin.
- Tin, (5), Maung Headquarters Assistant, Shwebo.
- \*Tin, Prof. Pe Maung, M.A., B.Litt., I.E.S., University College, Rangoon.
- \*Tin, U, A.T.M., K.S.M., 53, Creek Street, Rangoon.
- Tin, U Hla, Akunwun, Pakokku.
- To, U Saw Po, Deputy Inspector of Schools, Thaton.
- \*Tripp, L. M. G., c/o Messrs. Fabricius & Co., Pakokku.
- \*Tsain, U, *Bar-at-Law*, Pegu.
- \*Tun, Dr. Aung, M.B., Ch.B., Civil Surgeon, Pegu.
- Tun, U Ba, Township Officer, Chaungzon.
- Tun, U Ba, Headquarters Assistant, Mergui.
- Tun, U Po, E. A. C. of Forests, 27, Godwin Road, Rangoon.
- Tun, U Thet, 25, Prome Road, Rangoon.
- Tway, U Chit, Inspector of Police, Pyu, (Toungoo).
- U, U Tun Hla, Resident Excise Officer, Maungdaw (Akyab).
- U, U Kyaw Zan, Miller, Akyab.
- Vardon, S. D., Advocate, C Road, Mandalay.
- Verhage, A., Merchant, Messrs. Massink & Co., Ltd., Rangoon.
- † Waley, A., Department of Prints and Drawings, British Museum, London, W. C. 1.
- Walters, Rev. H. C., W. M. M. High School, Mandalay.
- Webb, Rev. Paul W., Supdt., Wesleyan Methodist Mission School, Kyaukse.
- \*White, Sir Herbert Thirkell, "The Cottage", St. Ives, Cornwall.
- Whiting, H. N., Nandawgone, Meiktila.

- Wilkie, H. G., I.C.S., c/o Messrs. A. Scott & Co., Rangoon.  
 \*Williamson, A., M.A., I.C.S., Deputy Chairman, Rangoon Development Trust.  
 \*Wilson, I. D., Lecturer, Engineering Institute, Insein.  
 Win, (2), U Po, Akunwun, Mergui.  
 Wischam, Miss M. R., "Roslyn", Promé Road, Rangoon.  
 Wolfenden, Stuart, N., 620, Alpine Drive, Beverly Hills, California.  
 \*Woods, E. A., Commander, Irrawaddy Flotilla Co., Ltd., Rangoon.  
 Wun, U So, Junior Assistant Registrar, Co-operative Societies, Meiktila.  
 Ya, U Tun, A.T.M., K.S.M., Deputy Commissioner, Myaungmya.  
 Yah, U Kyaw, Subdivisional Police Officer, Myanaung.  
 Yain, The Hon'ble Mr. L. A., Minister to the Govt. of Burma.  
 \*Yee, U Po, Rice Miller, Hony. Magistrate, 3, Edward Street, Rangoon.  
 Yin, U Ba, Special Power Magistrate, Hanthawaddy.  
 Yin, U Tun, Township Officer, Kungyangon South.  
 Yin, U Tun, Head-master State Anglo-Vernacular School, Namtu.  
 Zahur, c/o Mohamed Sultan, Senior Courts Interpreter, Akyab.  
 Zan, U Ba, Subdivisional Officer, Meiktila.  
 Zan, Abraham Shwe, Deputy Inspector of Karen Schools, Moulmein.  
 Zan Saya, Head-master, R. C. M. School, Thonze.

---

## OBITUARY.

1927.

Prof. K. M. Ward  
 U Po Sa, I.S.O., K.S.M.  
 U Tun Hlaing  
 U Po Sit  
 Lieut. S. F. Stainer  
 Mr. R. Swinhoe



**THE JOURNAL**  
**OF THE**  
**BURMA RESEARCH SOCIETY**

**EDITED BY**  
**PE MAUNG TIN**  
**AND**  
**F. J. MEGGITT.**

**VOLUME XVII**  
**1927**

**PUBLISHED BY THE SOCIETY.**





# CONTENTS.

	PAGES.
CHIBBER, H. L.,—Geography of South Tenasserim and the Mergui Archipelago. (With 12 plates) ....	127
.....The ancient volcanoes of Burma. (With 1 plate) ....	169
.....An estimation of the age of Mount Popa deduced from the amount of erosion of the plateau on the west	174
CONNOR, J. P.,—The mud volcanoes of Minbu ....	176
GHOSE, S. L.,—The Myxophyceae of Rangoon. iii. (With 1 plate)	238
.....On a collection of Myxophyceae from Mergui and the neighbouring islands. (With 1 plate) ....	244
.....On some Myxophyceae from Maymyo. (With 1 plate) ....	252
HALL, D. G. E.,—English relations with Burma, 1587-1686 ....	1
HANDA, M. R.,—A note on two species of <i>Chaetophora</i> from Rangoon. (With 1 plate) ....	257
.....A contribution to our knowledge of the Green Algae of Rangoon. (With 2 plates) ....	259
HARDING, H. I.,—K'ala language: addendum to Davies' "Vocabularies of Mon-Khmer languages of Yunnan and Western Tibet" ....	165
IYER, P. G. G.,—A prosodic note on Aṣvaghosa's <i>Buddhacarita</i> ....	157
KHANNA, L. P.,—The morphology of <i>Cyathodium tuberosum</i> Kashyap. (With 2 plates) ....	270
MEGGITT, F. J. and SUBRAMANIAN, K.,—The tapeworms of the subfamily Murinae, with special reference to those occurring in Rangoon ....	190
REYNOLDS, H. O.,—Some notes on a Burmese phonetic reader (L. E. Armstrong and Pe Maung Tin) ....	119
STAMP, L. DUDLEY. Notes on some fossiliferous localities in the Peguan rocks of Central Burma ....	177
STEWART, J. A.,—Lecture on the Dictionary ....	105
List of members of the Society, 1926 ....	96
Proceedings of the Society, 1927 ....	80
Recent additions to the Library ....	94
Annual report of the Society, 1926 ....	86



# INDEX.

<i>Acomys musschenbrocki</i> , tapeworms of	227
Açvaghosa's Buddhacarita, prosodic note on	157
Algae (green) of Rangoon	258
<i>Alyselminthus crassiceps</i> Zeder	217
<i>litterata</i> (Batsch)	213
<i>pusilla</i> (Goeze)	215
<i>Anabaena variabilis</i> Kütz	241
<i>Ankistrodesmus falcatus</i> (Corda)	262
<i>Anoplocephala arvicanthidis</i> Kofend	196
Anoplocephalidae	195
<i>Aphanocapsa biformis</i> A. Br.	245
<i>Aphanothece caldariorum</i> Richt	245
<i>Castagnei</i> (Breb.)	252
<i>Apodemus sylvaticus</i> , tapeworms of	227
<i>Arvicanthis abyssinicus</i> , tapeworms of	227
<i>Arvicanthis barbatus pulchellus</i> , tapeworms of	228
<i>niloticus</i> , tapeworms of	228
<i>pumilio</i> , tapeworms of	228
<i>pumilio bechuanæ</i> , tapeworms of	228
<i>testicularis kordofanensis</i> , tapeworms of	228
<i>Bothriocephalus liguloides</i> Leuckart	222
<i>masoni</i> (Cobbold)	222
<i>raticola</i> Linstow	222
Buddhacarita, prosodic note on Açvaghosa's	157
Burma, English relations with	1
existence of English factories in	23
in 17 century, condition of English trade with	51
volcanoes of	169
Burmese dictionary	105
phonetic reader	119
<i>Calothrix brevissima moniliforma</i> n. var	242
<i>clavatoides</i> n. sp.	253
<i>scytonemicola</i> Tilden	242
<i>thermalis</i> (Schwabe)	247
<i>Catenotaenia</i>	215, 216
<i>Catenotaenia lobata</i> Baer	215
<i>pusilla</i> (Goeze)	215
<i>symmetrica</i> (Baylis)	207
Central Burma, fossils of	177
<i>Cercocystis hymenolepis-murinae</i>	211
<i>tenebrionis</i>	210
<i>Chaetophora</i>	257

<i>Chaetophora elegans</i> (Roth) ....	257,	265
<i>incrassata</i> (Hudson) ....	257,	265
<i>Chitinolepis</i> ....	....	205
<i>Chitinolepis mjöbergi</i> Baylis ....	....	205
<i>Choanotaenia</i> ....	....	206
<i>Choanotaenia</i> sp. (Joyeux and Baer) ....	....	206
<i>Chroococcus giganteus</i> West ...	....	253
<i>turgidus solitarius</i> n. var ...	....	245
<i>varius</i> A. Br. ...	....	238
<i>Coelastrum indicum</i> Turner ....	....	264
<i>microporum</i> Naegeli ....	....	263
<i>Coenurus cerebralis leporis-cuniculi</i> Diesing ....	....	217
<i>cuniculi</i> (Diesing) ...	....	217
<i>lowzowi</i> Lindemann ...	....	217
<i>serialis</i> Gervais ....	....	217
coinage and currency of Burma ....	....	22
conditions of English trade with Burma in 17 century ....	....	51
<i>Cricetomys gambianus</i> , tapeworms of ...	....	228
<i>Cyathodium tuberosum</i> Kashyap ...	....	270
<i>Cyclophyllidea</i> ...	....	195
<i>Cysticercoides tenebrionis</i> ....	....	210
<i>Cysticercus baillieti</i> Railliet ....	....	214
<i>elongatus</i> Blumenberg ....	....	214
<i>hymenolepis-diminutae</i> ....	....	208
<i>hymenolepis-naae</i> ...	....	211
<i>longicollis</i> Krabe and Leuckart ...	....	217
<i>polycephalus</i> Reinetz ...	....	217
<i>taeniae-diminutae</i> ...	....	208
<i>taeniaa-microstomae</i> ....	....	210
<i>taeniae-murinae</i> ....	....	211
<i>taeniae-nanae</i> ....	....	211
<i>talpae</i> Bendz ....	....	217
<i>tenebrionis</i> Villot ....	....	210
<i>Davainea blanchardi</i> Parona ...	....	198
<i>celebensis</i> Janicki ...	....	198
<i>gracilis</i> Janicki ...	....	200
<i>guineensis</i> (Graham) ...	....	196
<i>polycalceola</i> Janicki ...	....	201
<i>trapezoides</i> Janicki ...	201,	203
<i>retractilis</i> Stiles ...	....	202
Davaineidae ....	....	197
Davaineinae ...	....	197
<i>Davainoides polycalceola</i> (Janicki) ...	....	201
<i>Dibothriocephalus mansoni</i> (Cobbold) ...	....	222
<i>Dibothrium mansoni</i> ...	....	222
dictionary, Burmese ....	....	105
Dilepiinae ...	....	205
<i>Diplacanthus nana</i> (Siebold) ....	....	211

Diphyllbothriidae	...	...	...	221
Diphyllbothriinae	...	...	...	221
<i>Diphyllbothrium</i>	...	...	...	221
<i>Diphyllbothrium mansonii</i> (Cobbold)	...	...	...	222
Dipyliinae	...	...	...	206
<i>Dithyridium</i>	...	...	...	213
<i>Dithyridium baillieti</i> (Railliet)	...	...	...	214
<i>elongatum</i> (Blumenberg)	...	...	...	214
<i>Echinococcus</i>	...	...	216,	220
<i>Echinococcus granulosus</i> (Batsch)	...	...	...	216
English factories in Burma, existence of	...	...	...	23
English relations with Burma	...	...	...	1
English trade with Burma in 17 century, condition of	...	...	...	51
fauna of Mergui and Tenasserim	...	...	...	40
<i>Fischerella epiphytica</i> n. sp.	...	...	...	46
*fisheries of Mergui and Tenasserim	...	...	...	141
flora of Mergui and Tenasserim	...	...	...	138
Fort St. George consultation books	...	...	...	73
fossils in Peguan rocks	...	...	...	187
geology of Mergui and Tenasserim	...	...	...	131
<i>Gleocapsa atrata</i> Kütz	...	...	...	238
<i>gelatinosa</i> Kütz	...	...	...	246
<i>Glounda campanae</i> , tapeworms of	...	...	...	228
<i>Halysis lineata</i> (Goeze)	...	...	...	213
<i>litterata</i> (Batsch)	...	...	...	213
<i>pusilla</i> (Goeze)	...	...	...	215
<i>Hapalosiphon Welwitschii</i> West and West	...	...	...	241
<i>Hydatigera</i>	...	...	...	220
Hymenolepididae	...	...	...	220
Hymenolepidinae	...	...	...	205
<i>Hymenolepis</i>	...	...	208,	212
<i>Hymenolepis contracta</i> Janicki	...	...	...	208
<i>crassa</i> Janicki	...	...	...	208
<i>diminuta</i> (Rudolphi)	...	...	...	208
<i>diminutoides</i> Cholodkovsky	...	...	...	208
<i>flavopunctata</i> (Weinland)	...	...	...	208
<i>fraterna</i> Stiles	...	...	...	211
<i>globirostris</i>	...	...	...	209
<i>horrida</i> (Linstow)	...	...	...	210
<i>inexpectata</i> Cholodkovsky	...	...	...	211
<i>isomydis</i> (Setti)	...	...	...	222
<i>longior</i> Baylis	...	...	...	211
<i>megaloon</i> (Linstow)	...	...	...	208
<i>microstoma</i> (Dujardin)	...	...	...	210
<i>murina</i> (Dujardin)	...	...	...	211
<i>muris-variegatus</i> Janicki	...	...	...	210
<i>nana</i> (Siebold)	...	...	...	211
<i>nana fraterna</i> Stiles	...	...	...	211

<i>relicta</i> (Zschokk)	...	...	...	208
<i>Icterotaenia</i> sp. Joyeux and Baer	...	...	...	206
industries of Mergui and Tenasserim	...	...	...	141
<i>Inermicapsifer</i> ...	...	...	...	195
<i>Inermicapsifer aberratus</i> Baer	...	...	...	196
<i>arvicanthidis</i> Kofend	...	...	...	196
<i>gambianum</i> (Beddard)	...	...	...	196
<i>guineensis</i> (Graham)	...	...	...	196
<i>zanzibarensis</i> Meggitt	...	...	...	196
K'ala language	...	...	...	165
<i>Kirchneriella lunaris</i> (Kirchner)	...	...	...	262
<i>Lepidotrias flavopunctata</i> Weinland	...	...	...	208
<i>Ligula mansonii</i> Cobbold	...	...	...	222
<i>Linstowia</i> ...	...	...	...	195
<i>Linstowina murina</i> ...	...	...	...	211
<i>Linstowinae</i> ...	...	...	...	195*
<i>Lyngbya Ceylanica</i> Wille	...	...	...	249
<i>Kutzingiana</i> Kirchner	...	...	...	249
<i>truncicola</i> Ghose	...	...	...	249
Master, Sir Streynsham	...	...	...	62
Maymyo Myxophyceae of	...	...	...	252
Mergui Archipelago, geography of	...	...	...	127
Mergui, Myxophyceae of	...	...	...	244
<i>Mesocestoides</i> ...	...	...	...	213
<i>Mesocestoides canis-lagopodis</i> (Rudolphi)	...	...	...	213
<i>corti</i> Hoeppli	...	...	...	213
<i>lineate</i> (Goeze)	...	...	...	213
<i>litterata</i> (Batsch)	...	...	...	213
<i>utriculifera</i> (Walter)	...	...	...	213
Mesocestoididae	...	...	...	212
Mice, tapeworms of	...	...	...	190
<i>Micromys agrarius</i> , tapeworms of	...	...	...	228
<i>minutus</i> , " "	...	...	...	229
Minbu, mud volcanoes of	...	...	...	176
minerals of Mergui and Tenasserim	...	...	...	134
<i>Moniliformis moniliformis</i> (Bremser)	...	191, 192, 193,	...	194
<i>Monodoridium utriculiferum</i> Walter	...	...	...	213
Mount Popa, age of	...	...	...	174
mud volcanoes of Minbu	...	...	...	176
<i>Multicapsiferina gambianum</i> (Beddard)	...	...	...	196
<i>guineensis</i> (Graham)	...	...	...	196
<i>muricola</i> (Baylis)	...	...	...	196
<i>Multiceps</i> ...	...	...	216,	220
<i>Multiceps radians</i> Joyeux, Richet and Schulmann	...	...	...	217
<i>serialis</i> (Gervais)	...	...	...	217
Murinae, tapeworms of	...	...	...	190
<i>Mus flavidulus</i> , tapeworms of	...	...	...	229

<i>moggi</i> , tapeworms of	229
<i>musculus</i> , „ „	219, 229
<i>musculus wagneri</i> „	229
Myxophyceae of Maymyo	252
Mergui	252
Rangoon	238
<i>Nesocia bengalensis</i> , tapeworms of	192, 230
<i>Nostoc microscopicum</i> Carmichael	248, 255
<i>Oedogonium ciliatum</i> (Hass.)	265
<i>intermedium</i> Wittrock	265
<i>sociale</i> Wittrock	266
<i>Oochoristica</i>	207
<i>Oochoristica symmetrica</i> (Baylis)	207
<i>Oscillatoria amoena</i> (Kutz).	240
<i>annae</i> Goor	248
<i>animalis</i> Ag.	255
<i>curviceps angusta</i> n. var.	240
<i>limosa</i> (Roth).	239
<i>princeps</i> Vauch.	239, 249
<i>Paranoplocephala isomydis</i> (Setti)	222
<i>Pediastrum clathratum</i> Baileyanum Lemmermann	260
<i>doudenarium</i> (Bailey)	260
<i>duplex reticulatum</i> Lagerheim	260
<i>gracile</i> Braun	261
<i>incavatum irregularum</i> n. var.	261
<i>Tetras anamolium</i> n. var.	261
<i>burmanicum</i> n. var.	261
Peguan rock fossils	177
<i>Phormidium ambiguum</i> Gomont	255
<i>Bohneri</i> Schmidle	255
<i>Piestocystis elongatum</i> (Blumenberg)	214
<i>Pithophora kevensis</i> Wittrock	264
<i>Plerocoides baillieti</i> Railliet	214
<i>mansoni</i> (Cobbold)	222
<i>Polychlamydom Varium</i> n. sp.	249
<i>Pseudophyllidea</i>	221
<i>Ptychopysa canis-lagopodis</i> (Rudolphi)	213
<i>lineata</i> (Goeze)	213
<i>lietrata</i> (Batsch)	213
<i>Raillietina</i>	197, 204
<i>Raillietina baeri</i> n. sp.	198
<i>blanchardi</i> (Parona)	198
<i>celebensis</i> (Janicki)	198
<i>celebensis paucicapsulata</i> n. var.	199
<i>fatalis</i> n. sp.	199
<i>fluxa</i> n. sp.	200
<i>funnebris</i> n. sp.	200
<i>gracilis</i> Janicki)	200



<i>indica</i> n. sp.	....	201
<i>isomydis</i> (Setti)	....	222
<i>kordofanensis</i> n. sp.	....	201
<i>polycalceola</i> (Janicki)	....	201
<i>retractilis</i> (Stiles)	....	202
<i>trapezoides</i> (Janicki)	....	203
Rangoon, <i>Chaetophora</i> form	....	257
green algae of	....	258
Myxophyceae of	....	238
rats and mice, tapeworms of	....	190
rats, tapeworms of	....	190
<i>Rattus coucha</i> , tapeworms of	....	230
<i>damarensis</i> " "	....	230
<i>marungensis</i> , " "	....	230
<i>meyeri</i> , " "	....	230
<i>norwegicus</i> " "	....	193, 230
<i>rajah</i> , " "	....	231
<i>rattus</i> , " "	....	194, 231
<i>rattus alexandrinus</i> tapeworms of	....	232
<i>rufinus</i> , " "	....	232
<i>sabanus</i> , " "	....	232
<i>siporanus</i> , " "	....	232
<i>terrae-reginae</i> , " "	....	232
reader, Burmese phonetic	....	119
<i>Reditaenia</i>	....	219
Samuel, episode of Thomas	..	11
<i>Scenedesmus bijugatus seriatus</i> (Turpin)	...	263
<i>obliquus</i> (Turpin)	....	263
<i>quadricauda typicus</i> West and West	...	263
<i>Schizothrix vaginosa non-granulata</i> n. var.	...	250
<i>Scytonema caldarium</i> Setchell	...	247, 254
<i>mirabile</i> (Dillw.)	....	255
<i>ocellatum capitatum</i> n. var.	...	247
<i>varium</i> Kutz	....	248, 254
<i>Selenastrum gracile</i> Reinsch	...	262
<i>Sirogonium sticticum</i> Kützing	...	267
<i>Sparganum mansonii</i> (Cobbald)	...	222
<i>Spirogyra decima</i> (Müll.)	...	266
<i>porticalis decima</i> Cooke	...	266
<i>sticticum</i> Willie	...	267
<i>turfosa</i> Gay	...	266
<i>Stigonema minutum</i> (Ag)	....	246
Streynsham Master, Sir	...	62
Syriam factory, failure of	...	39
foundation of	...	26
<i>Taenia</i>	...	217, 220
<i>Taenia aegyptica</i> Bilharz	...	211
<i>brachydera</i> Diesing	...	210

<i>canis-lagopodis</i> Rudolphi	...	...	213
<i>cateniformis</i> Goeze	...	...	213
<i>cateniformis glirium</i> Gmelin	...	...	215
<i>litteratus</i> Batsch	...	...	213
<i>ceptocephala</i> Lussano and Romaro	...	...	208
<i>crassiceps</i> Zeder	...	...	217
<i>diminuta</i> Rudolphi	...	...	208
<i>flavopunctata</i> (Weinland)	...	...	208
<i>glirium</i> Gmelin	...	...	215
<i>horrida</i> Linstow	...	...	210
<i>hydatigena</i> (Pallas)	...	...	218
<i>imbricata</i> Diesing	...	223,	215
<i>isomydis</i> Setti	...	...	222
<i>lagopodis</i> Leuckart	...	...	213
<i>leptocephala</i> Creplin	...	...	208
<i>lineata</i> Goeze	...	...	213
<i>litterata</i> Batsch	...	...	213
<i>megaloon</i> Linstow	...	...	208
<i>microstoma</i> Dujardin	...	...	210
<i>minima</i> Grassi	...	...	208
<i>murina</i> Dujardin	...	...	211
<i>muris-decumani</i> Diesing	...	...	210
<i>muris-ratti</i> (Creplin)	...	...	223
<i>muris-sylvatici</i> Rudolphi	...	...	224
<i>musculi</i> Rudolphi	..	...	224
<i>nana</i> Siebold	..	...	211
<i>pisiformis</i> (Bloch)	..	...	218
<i>polycantha</i> Leuckart	...	...	217
<i>pseudo-cucumerina</i> Railliet	...	...	213
<i>pseudo-elliptica</i> Railliet	...	...	213
<i>pusilla</i> Goeze	...	...	215
<i>ratti</i> Rudolphi	...	...	224
<i>relicta</i> Zschokke	...	...	208
<i>serialis</i> Gervais	...	...	217
<i>serrata astephana</i> Diesing	...	...	213
<i>solium</i> L.	...	...	219
<i>taeniaeformis</i> (Batsch)	...	...	219
<i>varesina</i> E. Parona	...	...	208
<i>vulpina</i> Schrank	...	...	213
<i>umbonata</i> Molin	...	...	224
<i>utriculifera</i> Walter	...	...	213
tapeworms of Murinae	...	190,	225
Tenasserim, geography of South	...	...	127
<i>Thysanosoma gambiana</i> Beddard	...	...	196
<i>Thysanotaenia gambiana</i> (Beddard)	...	...	196
<i>Tolypathrix inflata</i> n. sp.	...	...	254
<i>Ulothrix tenerrima</i> Kützing	...	...	264
<i>Vesiculifera ciliata</i> Hassall	...	...	965

volcanoes of Burma	----	----	----	169
volcanoes, mud	----	----	----	176
<i>Westiella intricata</i> Borzi	----	----	----	241
<i>Zschokkeella gambiana</i> (Beddard)	----	----	----	196
<i>guineensis</i> (Grahma)	----	----	----	196
<i>muricola</i> Baylis	----	----	----	196





If you wish to become a member or to propose a friend for membership, you are requested to sign the attached slip and forward it to the Hon. Secretary. If not, please pass on the forms to one of your friends.

## BURMA RESEARCH SOCIETY.

Patron:

HIS EXCELLENCY THE GOVERNOR OF BURMA.

THE BURMA RESEARCH SOCIETY was founded in 1910. Its objects are the study and encouragement of Art, Science, History and Literature in relation to Burma, and the promotion of intercourse between members of different communities with a common interest in such objects. Meetings are held periodically at University College, Rangoon, at which papers are read. The principal work of the Society is the publication of a Journal, which appears thrice a year and is supplied free of charge to members. Articles by well-known scholars such as Messrs. C. O. Blagden, C. Duroiselle and R. Halliday have appeared in the Journal, but the Editor is chiefly dependent for contributions on Burmese and English members of the Society stationed in various parts of Burma. The articles are mostly on Burmese history, archaeology, literature, art, language, philosophy, religion and folklore. They are of interest not only to scholars but also to general readers who are attracted by Burma and its people. The Editor welcomes contributions from members who have made a study of any special subject or locality. Illustrated articles and articles in Burmese are always welcome. Apart from its Journal, the Society is also publishing Burmese literary and historical works and translations, and in this branch of the activity enjoys the assistance of the best Burmese scholars. It possesses a growing library for the use of members.

The Society is dependent for its funds entirely upon the subscriptions of members. The subscription is Rs. 10 yearly, payable in advance, or a single sum of Rs. 150.

The Society invites applications for membership. Anyone who desires to join, may ask a member to propose him, or may write to the HONORARY SECRETARY, BURMA RESEARCH SOCIETY (Bernard Free Library), RANGOON. The attached form may be used.

To

THE HONORARY SECRETARY,

Burma Research Society,

(Bernard Free Library), RANGOON.

\* I propose for election as a members of the BURMA RESEARCH SOCIETY the name of.....Designation.....  
Address.....

\* I desire to be elected a member of the BURMA RESEARCH SOCIETY.

Name.....

Designation.....

Address.....



THE  
GLASS PALACE CHRONICLE  
OF THE  
KINGS OF BURMA  
(HMANNAN YAZAWIN)

TRANSLATED BY  
PE MAUNG TIN

AND  
G. H. LUCE,

PUBLISHED BY THE OXFORD UNIVERSITY PRESS  
FOR THE TEXT PUBLICATION FUND OF THE BURMA RESEARCH SOCIETY

The *Glass Palace Chronicle*, the most important of the native histories of Burma, was compiled in 1829, by a committee of scholars appointed by King Bagyidaw of Burma, who based their work on earlier chronicles, inscriptions, and other ancient records.

The present translation omits the first two parts of the Chronicle, as they merely retell the story of Buddhism and of the Buddhist kings of Ancient India, and begins at the point where the story moves to Burma. The third part opens with the history of the three Burmese kingdoms of Tagaung, Tharehkittara and Pagan. The fourth and fifth parts of the present volume cover perhaps the most interesting period of Burmese history, that of the kingdom of Pagan—the city on the middle Irrawaddy a hundred miles below Mandalay, whose noble temples and vast ruins still, astonish visitors. The volume closes with the fall of Pagan (1287 A. D.), consequent on the invasion of Burma by the armies of Khublai Khan. It is hoped that the response to this publication will justify the Burma Research Society in continuing the translation and adding notes in subsequent volumes.

**ORDER FORM FOR MEMBERS ONLY.**

**Special Reduced Price for Members of the B. R. S. Rs. 5 per copy  
(in paper covers).**

To

**THE HONORARY SECRETARY,**

**Burma Research Society.**

**(Bernard Free Library), RANGOON.**

DEAR SIR,

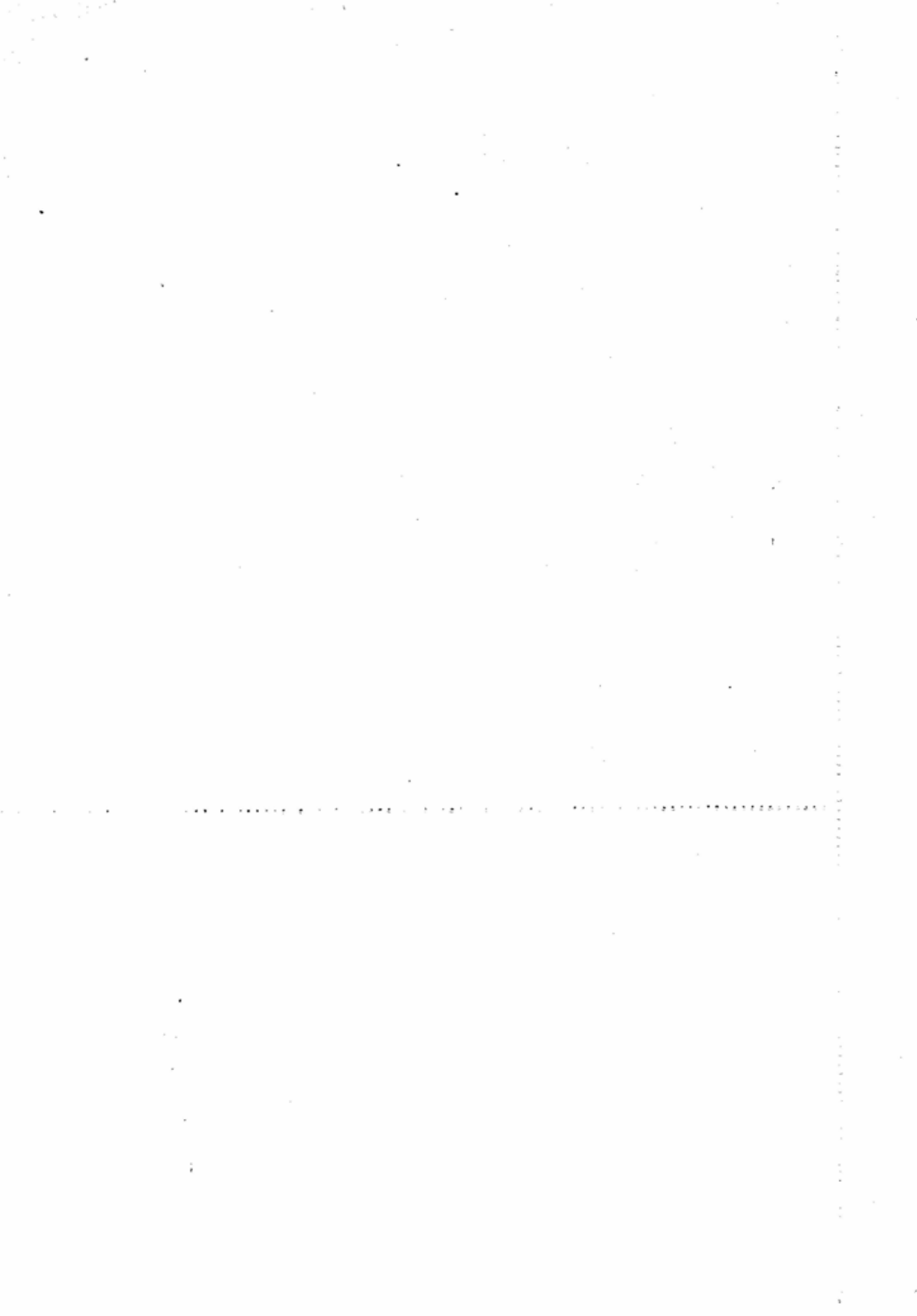
I am a member of the Burma Research Society. Please send  
me.....<sup>copy</sup><sub>copies</sub> of the translation of the Glass Palace Chronicle for  
which I enclose the sum of Rs.....<sub>V.P.P.</sub>

Name.....

Designation.....

Address.....





# BURMA RESEARCH SOCIETY

## PUBLICATION SERIES.

*General Editor*—Professor PE MAUNG TIN.

### *Volumes Already Published.*

Burmese  
Texts No.

1	Owada-du Pyo by Seinda Kyawthu—Pyigyimundyne Press	Rs. A. 0 6
2	Dewagomban Pyazat by U Kyin U—Aungzeyatu Press....	0 6
3	Ommadandi Pyo by Hsameikkhon Ywaza—Pyigyimundyne Press ....	0 8
4	Kandaw Mingyaung Myittasa—Kawi Myet-hman Press	1 0
5	Maung Kala Mahayazawingyi Vol. I—Pyigyimundyne Press	4 0
6	Padetha Thigyin by U Kyin U—Pyigyimundyne Press ....	0 4
7	Papahein Pyazat—Pyigyimundyne Press ....	0 6
8	Yezagyo Hkondaw Pyatton—Hanthawaddy Press	1 4
9	Uteinna Pyo by Monywa Sayadaw „	2 4
10	Pyinsa-papi Rakan by U Shwe Ni—Aungzeyatu Press ....	0 8
11	Selections from Jataka Stories—Hanthawaddy Press ....	2 4
12	Thutathoma Pyo by Hsameikkhon Ywa a --Sun Press ....	1 8
13	Shwe Pyizo Wuttu by U Lat—Kawi Myet-hman Press ....	2 4

[*Translation into English* : The Glass Palace Chronicle.  
A translation of the Hmannan Yazawin by Pe Maung Tin and G. H. Luce, Oxford University Press].

[The General Editor would be grateful to receive information about copies or manuscripts of U Kyin U's Winkanta Zat and U Ponnya's Myittaza and other rare works.]



# THE BURMA RESEARCH SOCIETY.

(FOUNDED 1910)

*For the Study and Encouragement of Arts, Science, History and Literature in relation to Burma.*

## PATRON.

HIS EXCELLENCY SIR CHARLES ALEXANDER INNES, K.C.S.I., I.C.S.

## COUNCIL.

### *President.*

C. W. DUNN ESQ., C.I.E., I.C.S.\*

### *Vice-Presidents.*

U SHWE ZAN AUNG, B.A., K.S.M., A.T.M.

THE HON'BLE MR. JUSTICE U BA, B.A., K.S.M.

J. S. FURNIVALL, ESQ., I.C.S. (Retired).

### *Honorary Secretary.*

B. R. PEARNS, M.A.\*

### *Honorary Treasurer.*

AHMED CASSIM, ESQ., B.A.\*

### *Honorary Editors and Librarians.*

PROF. PE MAUNG TIN, M.A., B.LITT., I.E.S.\*

PROF. F. J. MEGGITT, M.Sc., PH.D., I.E.S.\*

### *Executive Committee.*

The Office Bearers of the Society and

U TIN, K.S.M., A.T.M.

L. F. TAYLOR, ESQ., M.A., I.E.S.

U. E. MAUNG, M.A., I.L.B.,

*Bar-at-Law*

THE HON'BLE MR. JUSTICE U MYA

*BU, Bar-at-Law*

U PO SEIN, A.T.M.\*

U TUN PE, M.A., B.L., M.R.A.S.\*

D. J. SLOSS, ESQ., M.A., C.B.E., I.E.S.

Prof. D. G. E. HALL, M.A., I.E.S.\*

S. G. GRANTHAM, ESQ., B.A., I.C.S.

MEER SULEIMAN, ESQ., M.A.

U MAUNG GALE, (8). K.S.M.

G. H. LUCE, ESQ., M.A., I.E.S.

J. CLAGUE, ESQ., I.C.S.

U SET, B.A.

A. BROOKES ESQ., M.A., I.E.S.

### *General Committee.*

The Members of the Executive Committee and

M. S. COLLIS, ESQ., I.C.S.

U THEIN

MA'OR C. M. ENRIQUEZ.

U KYI O, B.A., K.T.M., K.S.M.

TAW SEIN KO, ESQ., C.I.E.

H. F. SEARLE, ESQ., I.C.S.

DR. O. HANSON,

D. B. PETCH, ESQ., I.C.S.

U SAN SHWE BU,

CHAS. DUROISSELLE, ESQ., M.A.

U THA TUN AUNG, B.A.

J. A. STEWART, ESQ., M.A., I.C.S.

U HLA, B.A.

U THA KIN,

G. E. HARVEY, B.A., I.C.S.

---

\*Members of the Sub-Committee,



# JOURNAL OF THE BURMA RESEARCH SOCIETY.

Vol. XVIII, Part II.

---

## CONTENTS.

	PAGES.
1. As it was in the beginning by J. S. Furnivall ..	51
2. A Merchant Pioneer by J. M. Symns ..	62
3. An Old Temple at Lawksawk by G. H. Luce ..	69
4. Floating Lighted Toy-boats by Sir R. C. Temple ..	71
5. Karen Sing-song Party by S. Z. A. ..	72
6. Proceedings of the Society ..	i
7. List of Books received ..	viii



## AS IT WAS IN THE BEGINNING.\*

Your Excellency, ladies and gentlemen,—The subject of my lecture this evening is the beginning of things in modern Burma. But before entering on my lecture, I would like, Sir, to welcome you on behalf of our Society, and to thank you for your kindness in making time so early in your term of office to encourage us by presiding over this meeting. Since you are so newly come among us, it may be permissible to say a few words about ourselves. It is just twenty years now since the project of this Society was first conceived, and nearly twenty years since we first appealed for members. "Despite the pessimism which prevailed in some quarters as to the result of the appeal" (I quote from the Report of the then Honorary Secretary, Mr. Duroiselle, at our first General Meeting) "within a few days applications from all parts of Burma and from almost every class of people began to come in and reached the unexpected number of 238". Since then our numbers have gradually risen and we have now over 300 members. Financially, also, we are in a strong position, thanks chiefly to the careful stewardship of Mr. W. G. Fraser and Mr. Cassim, and, without ever having received or even sought financial assistance from Government, we have gradually built up a balance adequate to our ordinary requirements. We have also founded a Text Publication Committee for editing and printing old Burmese Texts which have now published a dozen Texts and, under the judicious guidance of Professor Pe Maung Tin, is already self supporting. In thus fostering the study of the history and literature of Burma and its peoples, we may claim, I think, to have contributed in some degree to the reinvigoration of national sentiment, and personally I like to look on our Society as one of the earliest, and not the least unhelpful, of national movements in Burma.

But I hope, Sir, that you will not regard it as out of place on such an occasion as the present, if I ask you to join us in appealing to the younger generation to carry on our work. It is some years now since we took any special measures to enlarge our membership and there must be many new comers to Burma who hardly know of our existence and have not yet been asked to join. In these days when mutual comprehension and the sympathy that mutual comprehension breeds are so important for the future of the country, there must be some among them who would welcome the opportunity that we provide for all who take an interest in Burma and its past to meet on common ground. And more especially we would appeal, as we have always done, to Burmans. You, Sir, are not only the Patron of our Society, but the Chancellor of the University in which we hold this meeting. As years pass on, in all the public and cultural activities of Burma, we shall

\* Delivered at a public meeting of the Society held at University College on 15th August 1928, when His Excellency Sir Charles Innes presided.



become increasingly dependent on the members of this University, and we would like to see its graduates come forward in ever increasing numbers to join and take an active part in a Society which has for its first object the study and encouragement of Art, Science, History and Literature in relation to their own country. I hope that, perhaps, I may be able to give some of them an interest in research this evening by the materials that I have gathered among the Records of the Office of the Commissioner of Tenasserim.

As, I suppose, you all know, Tenasserim and Arakan were the parts of Burma first taken over by the British, and in Moulmein, the headquarters of the Tenasserim Division, the original documents relating to the earlier days of British rule in Burma may still be read: not without some difficulty, for although the script is beautifully clear in copper plate handwriting, the ink is so yellow and faded that many of the records are barely legible. Still, they can be read, and as we read the letters and notes and memoranda of the men who founded this outpost of British rule in Burma, we can see the men who wrote them gradually take form and substance. We can see Mr. Maingy, pompous but capable and diplomatic, touring his dominions on his elephants, and giving universal satisfaction; his unfortunate successor Mr. Blundell, struggling, bravely but unskilfully, to persuade the authorities in India that Burma should not be tied up in Indian red tape; and the efficient Major Broadfoot, with both eyes on those in India who were, in his opinion, the best judges of efficiency.

But we can see more than that. For we can see how the first two Commissioners tried to build up a government suited, as they hoped, to Burma and how, under the combined pressure of outside circumstances and a central government to which Tenasserim was only one among many Provinces of India and one of the least important, their system was brought into conformity with the regular machinery of Indian administration. In every part of India something of the same kind must have happened and although, so far as I am aware, the process has never been studied by historians, it deserves serious study and I hope that some day it may be undertaken for Burma by one of the younger members of the University. Obviously in a short lecture I cannot attempt anything of the kind and I shall be contented if I can beguile anyone to approach the task by showing that the study of old records has a lighter side.

For example, the student of these records will find an odd coincidence at the very outset of his researches. We do not have many Burmans in England, and it is rather strange that the military officer in charge of Mergui prior to the introduction of civil rule was a Captain Burman. It was Captain Burman who made over to Mr. A. D. Maingy, an officer of the H. E. I. Co.'s Service, stationed at Penang, which was then under the Government of India. Mr. Maingy's first attempt to reach Burma was inauspicious, for the ship in which he sailed was

## AS IT WAS IN THE BEGINNING.

wrecked and the first letter from him in these records contains his report upon the accident :

To the Hon. E. Fullerton, Esquire, Governor, etc., etc , etc.

Honourable Sir,—I regret to have to report for your information the return of the Hired Brig *Minerva* to Penang. She has unfortunately carried away her foremast and main top gallant mast when about five leagues to the north-west of Pulo Perah and was thus rendered unable to proceed on her voyage until a new mast is (*sic*) procured and the damage otherwise sustained repaired, which could not be effected at sea. I have called upon the owners to repair the accident with all possible expedition, and expect the brig will be fit again for sea in the course of a very few days.

I have, etc.,  
(Signed) A. D. MAINGY,  
*Commissioner for the  
Provinces of Mergui and Tavoy.*

Hired Brig, *Minerva*,  
South Channel,  
The 27th August 1825.

As we shall notice later, communications were rather difficult in those days. But the accident was repaired and on his second venture Mr. Maingy was more fortunate. Immediately on his arrival in Mergui he published the following document.—

## PROCLAMATION.

Inhabitants of Mergui,—The King of Ava by his unprovoked aggressions and extravagant pretensions having forced the British Government to invade his Dominions, one of his first acts was to take possession of these Provinces. But it is against the King and his arrogant Ministers and not against the people of Ava that the English Nation is at war, and in proof of this fact, the Right Honourable, the Governor-General of British India has resolved upon affording to you the inhabitants of these Provinces, the benefits of a Civil Government under the Superintendence and direction of the Honourable the Governor of Prince of Wales Island.

I hasten then to acquaint you that I am deputed from Prince of Wales Island to assume charge of these Provinces and to provide them with a Civil and Political Administration on the most liberal and equitable principles.

Inhabitants of Mergui,—Rest assured that your wives and children shall be defended against all foreign and domestic enemies. That life and property shall enjoy every liberty and protection and that your religion shall be respected and your Priests and religious edifices secured from every insult and injury. Proper measures shall be immediately adopted for administering justice to you according to your own established laws, so far as they do not militate against the principles of humanity and natural equity. In respect to revenue and all other subjects your own customs and local usages shall be taken into consideration, but the most free and unrestricted internal and external commerce will be established and promoted.

All that is required of you is to aid me towards giving you peace, order and happiness by each inhabitant returning to his usual occupation, by your respecting and cheerfully obeying all such as may be placed in authority over you, and by your discountenancing and pointing out where necessary the seditious and evil disposed and the enemies of the British Government.

Lastly I wish it to be clearly to be understood that access at all hours and places will be afforded by me to any, even the poorest inhabitants, who may desire to see me upon business.

Mr. Maingy promptly set about providing the people of Tenasserim with a civil and political administration on the most liberal and equitable principles. He introduced police, magistrates and jails; liberated slaves, tried to raise the "degraded condition of the female sex", promoted modern education, introduced regulations for controlling liquor, opium and gambling, attempted to open out communications and encourage trade, and laid the foundations of a revenue system. All these various activities are depicted in greater or less detail in these records.

But a civil and political administration on the most liberal and equitable principles is a costly luxury, and the first problem was to provide the necessary funds. His Burman predecessors had collected their revenue in kind, but Mr. Maingy needed money and this gave him a common interest with the cultivators in enhancing the value of their produce. For this it was necessary "to establish and promote the most free and unrestricted internal and external commerce". So he started to build roads. The Burman rulers had had no passion for improvements and works that were absolutely necessary had been undertaken with what Mr. Maingy called compulsive labour. Mr. Maingy had a prejudice against compulsive labour, and so had the labourers. He tried to make it more attractive by paying for the work and by regulations intended to prevent abuses. For a time he hoped that "the reluctance formerly evinced on the part of the labourers was almost entirely removed". But despite his regulations, the need for public works obliged him to compel each individual to work for Government for about six months in the year, and a serious scarcity in one

district was attributed in part to the interference with cultivation by the constant employment of cultivators on public works. He therefore hit on the expedient of employing convicts and as, in those days, there were no criminals in Burma, he imported convicts from India. But convicts require jails and the men imported from India spent so much time on building jails that they had not time left for making roads. But the importation of convicts meant that no further attempt was made to organise local labour. Cheap labour always tends to drive out good labour and in a report written ten years after Mr. Maingy had left the country we read that "the sole establishment in the Department of Public Works is one Native Superintendent on a salary of Rs. 20 a month". In the same report it is bluntly stated that "there are no roads, canals, tanks or other works in the interior."

Of course, road-making is a difficult business in Lower Burma. But one would have expected more to be accomplished in respect of water traffic. We have seen already that it was a difficult matter to get about in those times and Mr. Maingy was often put to serious inconvenience. In those days there were no tinned foods and the staple articles of diet were buffalo beef and rice. It is not surprising then that Mr. Maingy called on the post master for an explanation when a present of snipe took ten days to reach him over a distance of fifty miles. On another occasion it took him seventeen days to get to one district from the next. Mr. Maingy did not forget to inform the Government of India of these matters, but his pathetic recital of his troubles failed to induce them to provide him with a steam boat. He seems to have thought that he might get something out of the merchants of Moulmein and invited them to subscribe "for the purpose of promoting a Steam Communication with England". But he could only raise Sicca Rupees 836-9-10 $\frac{3}{4}$  and on a supplementary list Rs. 452-7-1 $\frac{3}{4}$ . This did not seem promising. Probably the merchants had financial interests in the sailing vessels and the project of travelling to England by steamer was abandoned. It does not seem to have been revived until the Suez Canal was opened forty years later. In time, however, relations with Ava became critical and there were no means of reporting on the situation to India or of moving troops in case of urgency. This gave Mr. Maingy an opportunity that he made use of with his usual tact and when the trouble had blown over he was the richer by the steam launch that he had been asking for so long in vain.

Another important source of revenue was excise, which at that time included gambling as well as opium and liquor. Like many officers since his time, Mr. Maingy was troubled by the policy of Government in these matters. He was a good revenue officer, but revenue from these sources always exercised his conscience. However, he kept his conscience reasonably under control until the time came for him to write his last report on general administration. When he was on the point of handing over charge to his successor and would no longer be responsible for balancing the annual budget, he let himself go to such effect that the maintenance

of gaming houses by Government was stopped and has never been revived. It is of some interest to note, in passing, that despite the loss of revenue from gambling there seems to have been no greater difficulty than before in balancing income and expenditure. In respect of liquor shops one chief item of policy was to keep the soldiers out of them, and for that purpose a guard of Indian sepoy was placed over the shop which they were not allowed to enter except in pursuit of an European soldier or a sepoy. But the guard liked a drink, and none the worse if they did not have to pay for it. This gave the thrifty Chinese licensees an opportunity for saving money. The Sepoys had nothing much to do and all day to do it in, so the Chinese arranged for them to do the daily cleaning of the shop. That was satisfactory to all parties until one day, when the Sepoys who had had too much to drink, or not enough, engaged in a free fight with the Chinese. No great damage was done except to the revenue, for the Chinese made this incident an excuse for offering less when the licence was next put up for sale. The Commissioner therefore endeavoured to substitute civil for military control over the shops. This required the sanction of the military authorities and the Government of India and for many years he could get nothing done. However, there arrived a time when the chronic financial stringency was more than usually acute and the Government of India authorised the change "on the understanding that the arrangement will effect a saving of Rs. 6 a month". Thereafter civil policemen were placed on guard over the shop until, some years later, it occurred to Major Broadfoot that the regimental officers might be made responsible for discipline among their men and he effected a further economy by abolishing the guard.

If there was any truth in some of the complaints about the liquor it is not surprising that the officers took measures to protect their men. Many people thought that the liquor supplied was of "a most inferior quality". Prominent among these grumblers was a Mr. Gahan, and if his habits were as intemperate as his language he must have known a good deal about liquor. He complained about the drink to the Commissioner and on failing to get satisfaction, appealed to the Government of India. When the Commissioner was called on for an explanation he reported that Mr. Gahan was "disordered in his intellect". However, Mr. Gahan stuck to his point and insisted that "the liquor was of a poisonous intoxicating quality and in numerous instances had occasioned instant death." That was too much for Mr. Blundell, who directed Mr. Gahan to leave the country within one month, adding weakly "provided suitable opportunities for quitting it should have occurred within that period". Otherwise he would be turned out. Of course Mr. Gahan found no suitable opportunity for quitting the country and reported to the Government of India the outcome of their solicitation on his behalf. He was triumphantly vindicated. His absurd and obviously exaggerated complaints about the liquor were forgotten and Mr. Blundell was informed that "deportation is an extreme remedy which is alien from the character and spirit of our administration".

The necessity for obtaining the approval of the Government of India to a change in the administration of the excise revenue which would affect expenditure by about Rs. 6 a month is one instance of the centralisation of Government even in those early days. On another occasion the Commissioner was forbidden to spend Rs. 648 on the erection of a civil hospital, because this would entail annual expenditure on repairs. It is true that one of the earliest Deputy Commissioners, finding a balance in his Treasury at the end of the financial year, obtained the consent of the Commissioner to make the people of Tavoy a grant to buy fire works for their New Year festival. The Commissioner agreed to this but almost at the same time received a warning from Mr. Secretary Swinton that the Government of India would hold all officers personally responsible for every item of unauthorised expenditure. Not long afterwards, like many officers since then, he received special instructions for reducing correspondence. But it happened, as it has often happened since, that almost simultaneously, he received other instructions which led inevitably to the multiplication of letter and reports. When, in these days of stenographers and typewriters, people complain of being tied to their offices, not many realise that from the beginning of British rule in Burma there have been similar complaints, and probably with better reason when officers had to write out their reports in their own hand.

With all this writing there was a demand for clerks and especially for clerks who could write English. There was therefore a demand for education and in his last Report Mr. Maingy touches on this subject. Here again he strikes a note that to many will sound modern although it has been echoing at more or less regular intervals of five years since Sir Arthur Phayre's Memorandum on Education in the sixties. He remarked that almost all elderly Burmans and Talaings could read and write as they had been educated in their monasteries. But in Burmese times the monasteries had been crowded with people desiring (he said) to be exempt from public labours and government exactions. Under his own "more mild administration" conditions had already changed. "Hence," he writes, "the Monasteries are almost deserted, the Priests are held in less reverence, and the contributions for their maintenance and towards the construction of religious edifices are very scantily bestowed." The monastic education had been, in Mr. Maingy's opinion, of little practical use, and even less calculated to effect an improvement of the mind; yet the boys had been taught something while now he saw "ground for apprehension that the rising generation would be almost uneducated if Government did not adopt measures for instructing them".

Although the first school, which was managed by American missionaries, had to be closed down, the experiment demonstrated "an anxious spirit for the acquisition of the English language" and it was re-opened shortly afterwards under a Mr. Hough, whose treatise on geography in Burmese could still be found until quite recently as a text book in the pongyi-kyangs. Mr. Blundell inspected the school regularly and was



attended on one occasion by the Lord Bishop of Calcutta. Perhaps this was a mistake as shortly afterwards there was a decline in the attendance. However, the Commissioner continued his inspections and was able to report satisfactory progress, especially in English, which he hoped would "enable them to communicate to their fellow country men in their own language the result of study in ours". This, he thought, was more desirable than a more showy, though less stable advance in arithmetic, grammar, etc. He hoped to send some of the boys to Calcutta to perfect their knowledge of English but their parents were afraid to send them so far from home. They were willing, however, to allow the Commissioner to pay for the education of the children in Moulmein, but although Mr. Blundell was evidently gratified by the friendliness and confidence implied in such an offer, it is not on record that he accepted it.

Mr. Hough was able to render valuable assistance in another favourite project. The commissioner had long wished to establish a Press "for the diffusion of wholesome reading", and at his own expense had bought suitable machinery and all the materials for printing. When Mr. Hough offered to help him, he decided to enlarge the project and establish not only a Burmese periodical but also an English paper which should be "free from all political subjects and entirely confined to subjects of local interest". These newspapers were so successful that they embarrassed the Commissioner by bringing in an income of Rs. 150 a month. But as the service of Mr. Hough were gratuitous and the managing printer was a Madras convict undergoing a sentence of transportation for embezzlement, the debit side of the account was not audited on a commercial basis. Still, the accounts, as kept, showed a profit and in order to relieve himself "from all imputation of having set up a press as a pecuniary speculation" the Commissioner transferred the periodical to a Committee which should pay the staff. Then, apparently, it failed.

Another plan of Mr. Maingy's which Mr. Blundell adopted with his usual enthusiasm and ill success, was the recruitment of a local regiment. "The Burmans and Talaings," wrote Mr. Maingy, "are superior in physical strength and in all points calculated to make good soldiers to most of the sepoys of western India." If prudent steps were taken in selecting a commander and adjutant, and limiting the period of enrolment to seven years, he anticipated little difficulty in raising a very serviceable corps. Nothing more was heard of the project for some time until a Captain Budd arrived from India rather unexpectedly. Mr. Blundell was delighted to find that Mr. Maingy's suggestion had been adopted, but was rather taken aback to have received no warning of Captain Budd's arrival. He also found it necessary to remind the Government of India of some details in Mr. Maingy's project which had been overlooked. Mr. Maingy attached great importance to the selection of suitable officers. Captain Budd may have been a good soldier, but he knew nothing of the country or the language and no provision had been made even for the pay of an interpreter. Apparently he was an ambitious man, looking for and recognised

as having a claim on a staff billet. There had been no vacancy in Fort St. George and when a job was going in Tenasserim, as no one in India knew any officer so unfortunate as to be buried so far off, they gave the job to Captain Budd. Still Mr. Blundell was ready to welcome anyone, but hoped that the appointment of adjutant would be given to an officer "who had already had the opportunity of learning something of the language and making himself acquainted with the people."

He was again disappointed, for another officer was sent from India. But this appointment was memorable. For the officer sent as Adjutant was Ensign Phayre, the first Chief Commissioner of British Burma, and author of a work that for over forty years remained the standard history of Burma; a soldier, scholar, statesman and gentleman, the greatest Englishman who has ever given his life to this outlying province of the Indian Empire.

Another point that had been overlooked in India was the scale of pay that Mr. Maingy had recommended. Indian troops had drawn an allowance in Burma for foreign service. Burman soldiers would require as much as the Indians had drawn including their allowance. But people in India did not see why Burman sepoys should draw more pay than Indian sepoys and, since they were serving in their own country, they would have to be content with the pay of Indians less the Burma allowance. If Burmans were to cost as much as Indians, it would be just as cheap and much less trouble to employ Indians than to train Burmans. They expected therefore to recruit local soldiers on Rs. 8½ a month. It was in vain that Mr. Blundell pointed out that the lowest pay for menials in civil offices was Rs. 10 a month. In these circumstances no recruits could be obtained and Captain Budd after lingering for some months in command of a non-existing regiment returned to India and, we may hope, to the staff billet that he wanted. Ensign Phayre followed him but, fortunately, not for long.

Probably both Mr. Maingy and Mr. Blundell often experienced a sense of disappointment. They had meant so well, had attempted so much and, as it seemed, achieved so little. But they were not so acutely disappointed as the ungrateful merchants whom they had hoped to benefit. The trouble came to a head when a memorial was presented to complain of the apathy displayed by the local administration to commercial interests. The Port charges were excessive, and the pilots inefficient; there were no standard weights and measures; there was no recognised code of law; the Commissioner would not fix the price of labour as they wanted. The signatures to the memorial were faked and most of the complaints were thoroughly unreasonable. But Mr. Blundell made the tactical mistake of telling the merchants too plainly that he thought so, and the even worse mistake of hinting that the Government of India might be as unreasonable as the merchants. This gave them an opening and they lodged a further memorial with the Government of India, excusing their persistence on the ground



that they had "property at stake" and "the fact of these Provinces, which possess as great capabilities as any part of India having been under British Government for upwards of fourteen years, while they were unaware of any merchant who had been able to engage in their trade without loss."

Much of this sounds very familiar although it happened a hundred years ago; merchants still accuse the Government of apathy, officials still complain of the growth of correspondence, we are still trying to raise a local regiment, few people seem to know whether we have too much education or too little, and most people would still assert that hpongyis are less respected than they were a few years back. There have, of course, been changes. If the Township Officer at Amherst sends a present of snipe to the Commissioner at Moulmein, they will probably take less than ten days to reach him, but it is not very long ago that a number of our Journal addressed to a Superintendent of Post Offices was returned from his headquarters with the endorsement "Addressee unknown". A good deal can be learned from rummaging among these records, but one chastening, or gratifying, reflection on them is that after all in many ways Burma now is very much as it was in the beginning.

J. S. FURNIVALL.

His Excellency said he must first thank Mr. Furnivall for the welcome he had given him to the Society. He could assure him that he was in entire sympathy with the objects of the Society and, if he could do anything to help it along, they could rely upon him. He was sure that they all expected him to thank Mr. Furnivall for the very interesting lecture he had just given them. He personally had listened to it with the greatest pleasure and attention, and he must confess that the impression left upon his mind was one of great envy for the administrators of a hundred years ago. It was quite true, according to all rules and regulations; that they could not do anything without reference to the Government of India, but he could not imagine a more enviable position than being separated from the Government by a thousand miles beyond the reach of telegraphs and steamships. He himself had once been in that enviable position when he was posted to a district extending to Minicoy, an island 360 miles on the west coast of Madras, which was 243 miles from the nearest post office, and once he got there there was no possible means of communication. On one occasion it had been necessary for him to visit Minicoy to allay a disturbance. Before sailing he reported to the Government of Madras that he proposed to take such action as the circumstances might require, and while there he did what he thought fit without getting permission to do so. In Madras also they had records of early times which he had worked on and he remembered reading about the exploits of Peter Rudge of Madura, which was 400 miles away from Madras, where he (Peter Rudge) dwelt in a palatial house and went round his district on an elephant and did himself very well. He was not quite sure that he lived on buffalo beef. There was no Auditor or Accountant-General in those

## AS IT WAS IN THE BEGINNING.

days, and that gentleman used the treasury as his banker and drew whatever he liked and had a considerable expenditure. After a time the treasurer informed him that he had absorbed about 20 lakhs. Peter Rudge immediately wrote a confidential letter to the Government which he sealed up to be opened after his death. He died bequeathing 7 lakhs of rupees to Government, leaving them 13 lakhs out-of-pocket. It was not now as it was in the beginning in those matters. The old time Collector and District Officer had a perfectly free hand and must have lived happy lives.

He would wish to endorse the appeal made by Mr. Furnivall to the younger generation of Burmans that they should support the Society. He himself had some experience, having been driven by force of circumstances to study the early history of his own district as a Settlement Officer. They had to write a history of their own district and, although he was extremely annoyed at the start, he eventually derived great pleasure from the study of the history of the district of Malabar, which, he could assure them, was a most fascinating study. There were references even to the Bible, the peacock coming from the Madras coast, and dhows from the Red Sea coming to the Malabar coast; and he even found references to Malabar in Roman literature. There was mentioned a pilot who discovered the Monsoons when coming from the east to the west coast of Malabar, and an account was given of the great trade between Rome and India in pepper and other spices. Even up to this day Roman coins were said to be dug up in Malabar. References were also found regarding the connection in trade between the Moors and the Malabar coast, and in 1498 Vasco da Gama with his little fleet sailed out till he touched the Malabar coast just north of Calicut. There were also accounts by Portuguese writers about Malabar, and later they had the same records as Mr. Furnivall had told them of. He took care to have all those records moved to the central record room in Madras, and they were at present under the charge of the Curator.

It seemed to him that Burma would be well advised to follow that example. He had just given them a few instances to show what interest they could find in a study of that kind and how it was well worth while for a person to take up the study in that way of the records of his district. If they did so, he could guarantee they would never regret it. He once more thanked Mr. Furnivall for his lecture and once again wished all prosperity to the Burma Research Society.

Mr. Dunn, the President of the Burma Research Society, on behalf of its members and the visitors moved a hearty vote of thanks to His Excellency Sir Charles Innes, who was the Patron of the Society. He said that it was not necessary for him to explain why they should pass a vote of thanks to His Excellency: they would have gathered from Mr. Furnivall's speech what benefits they could expect from His Excellency. One of these benefits was an increase in working members. They could also count upon him to give their society the status of a national institution. He asked all those present, both members and visitors, to give His Excellency a hearty vote of thanks in the usual manner.

## A MERCHANT PIONEER

Time was when the romance of commerce was more obvious; the great merchant adventurers lived in a period when the romantic side of their business led them inevitably to record their experiences, but when we come to the nineteenth century, to the period when Britain came to grips with Lower Burma, we find hardly any records of the wandering bagman.

Missionaries came and left the accounts of their lives and works, soldiers added their diaries and impressions, only the boxwallah refrained from writing.

That is why it is some cause for congratulation that amid this commercial silence the voice of a solitary trader is raised to remind us that commerce was not entirely devoid of romance in Burma a hundred years ago.

The name of that trader was Peter Aide, his nationality Greek and his occupation that of a general merchant.

A fatalist by force of circumstances, for his home was in Turkey, he shows throughout the diary that bears his name a firm belief that his many misfortunes were the fitting punishment of one who had been discontented with a moderate income and sought to increase it in Burma.

"When God" he writes, "wishes to deprive a man of his wealth, he makes him commit errors, and my voyage to Rangoon in those days was the cause of my total ruin."

It was in July 1822 that Peter Aide made an extensive purchase of piece-goods in Calcutta and arrived in Rangoon on board an Arab vessel. For two years his business prospered and then came the war—a war of which it appears that none of the Rangoon merchants had any warning. Our diarist tells us that he was expecting a consignment of handkerchiefs, wines and spirits from a Mr. Pandejie, his Calcutta agent, but "some time having elapsed and not any vessels arriving, the whole of the European merchants became uneasy in mind."

Then on the tenth of May came the startling news from the guard-houses down the river that a great number of vessels had been seen crowded with troops. At once all the European merchants were confined in the King's godowns at the orders of the Governor; there were eleven in all as well as two Baptist missionaries who were locked up with Aide, but, despite the fact that their feet were shackled, they seem to have been allowed some luxuries, for one of the merchants produced a bottle of brandy of which they all partook except the missionaries—a fact which causes our historian to add somewhat sententiously;—"it was not a time to drink, but to think seriously of the cruel events taking place,"

Then came the dramatic scene when the troops landed and the prisoners were roped together and dragged to the Shwe Dagon.

"On our way we passed a great number of the inhabitants, men women and children, running toward the Pagoda as fast as they could, saying that the troops had landed; our guards were punching us to go fast, but not being accustomed to irons, we were falling every few steps, and when we had arrived half the way, we heard the voices of British soldiers, when our guards left us and ran away to the jungle."

Their rescuer proved to be Major Sale of the 13th and when the irons had with some difficulty been removed, Adie's first instinct was to get back to his house, where he found his boxes all broken open and his possessions looted.

It is here that we find Aide at his best, and indeed throughout his diary, one cannot help admiring the persistency with which he was up and doing after each rebuff; now it is a fire, now a shipwreck, now the intrigues of a Deputy Commissioner, but in each misfortune he proved 'game', and in this, the first of his Burma mishaps we find him selling the furniture that had been left and setting up a little shop to sell sugar and tea to the troops.

Then the long awaited vessel arrived from Calcutta in August and once again—"I realized a handsome profit".

A man of charming personalities, he seems to have always won the hearts of Englishmen wherever he went, and in England where he had been sent by his father for his education it was his popularity with a class which he admits was superior to his own to which he owed a final breach with that relative. He tells us that the time which he ought to have spent in 'the University of Ealing' was passed in the more enjoyable society of earls and lords and amid the pleasures of Vauxhall.

This will explain how it was that Peter Aide was always a welcome guest at any of the messes in Rangoon and could count among his friends many a British officer. It was this friendship that led to some confidences which resulted in a curious adventure.

Before the British occupation of Rangoon, Peter Aide had heard a rumour that a neighbour by name Maung Gyi had built beneath his house a sort of crypt in which he kept an iron chest containing all his treasure. This Maung Gyi had fled suddenly on the arrival of the British troops, and it was then that it occurred to Aide that a search for loot might profitably be made.

"The devil" he writes, "came to my mind and induced me to go to Captain Snodgrass, the son-in-law of Sir Archibald Campbell who was the prize Agent for the Bengal army, and when I had enquired whether any remuneration was given for information given about property abandoned or left, I was informed that he who gives such information will be most certainly rewarded; Captain Snodgrass however recommended me not to mention anything about it to anybody and said that he would come and see the place in the course of the evening."

To cut a long story short, the spot was visited, the iron box discovered and hauled up with great difficulty and only after the aid of fifteen soldiers of the 38th regiment had been requisitioned. The box was not opened on the spot but taken away, and early next morning Aide was informed in a letter from the Adjutant-General that owing to his giving false information to the prize Agent, evidently to make game of him, the Brigadier commanding the army ordered him to quit Rangoon within twenty-four hours.

Aide at once went to Major Canning, the Governor-General's political agent, who advised him to go home and assured him that he would not be oppressed; and he heard no more of the matter except that an iron chest broken on the top and containing bricks had been found in the street near Sir Archibald Campbell's house.

At the end of the year most of the troops had left Rangoon for Pegu to meet Bandula who was reported to be coming down from Ava, and two days after their departure the town was surrounded by Burmese and on the night of the 23rd of December "almost the whole town of Rangoon was set on fire." In this conflagration Aide lost his house and property.

On the 25th of that month Sir Archibald Campbell returned and once again the town was full of troops.

Once more Aide showed his commercial insight in his efforts to recover the fortune that he had lost, and this is how he did it:—He had heard that a European ship was coming up the river, and so he went to Lieutenant Sutherland who had befriended him on the night of the fire and borrowed 'a suit of clothes and a beaver hat', then he proceeded down the river in a sampan and boarded this vessel; enquiring from the captain whether he had any beer for sale and hearing that there was plenty he commenced to haggle. At first the price was Rs. 9 per dozen for bottled beer and Rs. 90 per cask, but ultimately he was able to buy the lot at Rs. 8 a dozen bottles and Rs. 80 per cask; thus he became the possessor of 156 cases of bottled beer and 26 casks; the agreement being that half the cash should be payable on delivery of half the consignment and half on delivery of the rest; an agreement which suited Aide very well, for he had no cash to pay for the liquor, but he knew that the

dearth of coolies would result in the beer being landed in small consignments and that the lack of beer in a town filled with thirsty soldiers would enable him to realize the necessary sum of money long before the first half of the consignment had been landed. I like to think of Peter Aide sitting in Captain Prichard's cabin with his borrowed beaver hat on his lap and figuring out his probable profit.

It all turned out admirably! The bottled beer sold like hot cakes at Rs. 1-8 per bottle, and by means of a brass cock and a collection of bath dippers, he sold his barrelbeer at Rs. 1-4 per can.

It was a glorious day for Peter Aide who was 'obliged to engage two more servants to satisfy the poor soldiers who were coming up in great numbers.' It thus happened that by the middle of February he was worth ten thousand rupees.

If ever an epic comes to be written on the first Burmese war, one cannot help hoping that the struggle round the beer-shop on the wharf will be included; it was one of the most human touches, one of the most striking episodes in what was otherwise rather a featureless campaign.

Our merchant then proceeded to invest his profits in the purchase of a variety of articles—chiefly food-stuff and liquor—and sailed to Tavoy and Mergui where he tells us he made a profit of a hundred per cent.

It was at Tavoy that he met once more with misfortune, for hearing that paddy was scarce in Rangoon, he bought 24,000 baskets at Rs. 20 per hundred from the prize Agent, Lieutenant Sherman, but owing to difficulty in procuring transport, he had to store it in Tavoy till the beginning of 1827 when it was all destroyed in a fire which burned down his godowns.

Aide then proceeded to Mergui, where the Honourable Mr. Blundell was Deputy Commissioner (Colonel Burney filling the similar position at Tavoy with Mr. Maingay as Commissioner at Moulmein—the province then being under the jurisdiction of the Penang Government), Blundell appears to have been a success, at all events he did not thwart the commercial efforts of our diarist, who writes:—

"He did nothing else but the good of the public and the government and in his day trade and agriculture increased to a great degree." On the transfer of this official to Moulmein, a Deputy Commissioner to whom he refers as Captain B was sent to Mergui and both he and Dr. M, who officiated during Burney's absence from Tavoy, came in for a rare slating at the hands of this outspoken merchant.

Then came the insurrection at Tavoy and Mergui, followed by what Aide describes as 'the ignominious flight' of Captain B, the officers, the Assistant Surgeon and the Paymaster's clerk from Mergui. The Tavoy



revolt was quickly suppressed and on the arrival of Colonel Burney at Mergui, the repentant Shwe Gyi, the ring-leader, was standing on the wharf with the Treasury keys in his hand. But this is political history and it is commercial anecdotes that give this diary its chief interest.

In November 1829 Mr. Revelly of Penang made Aide his agent for procuring and shipping 'sapan' wood (Thein-nyat, the 'sappan' of Caesar Frederick for which Mergui was famous in the sixteenth century), and thanks to the large funds placed at his disposal by this famous Penang house, Aide was able to corner the market.

'In those days' he writes, 'Mr. Revelly become so rich that he left Penang for England and the agency was dissolved.'

It is not clear why Aide did not continue the business, the price of this wood being then Rs. 7 per hundred viss at Mergui and Rs. 8-8 per maund in Calcutta, but on Mr. Revelly's departure we find him dealing in paddy, and receiving a severe set-back owing to a gale which necessitated the throwing overboard of most of the cargo when on its way to Penang.

The boat which was his own returned to Mergui very much knocked about with her sails torn to pieces and no anchors or cable; her owner thereupon 'patched the sails with common mats and made a wooden anchor,' and having borrowed Rs. 5,000 from Colonel McLeod who was then Deputy Commissioner at Mergui, he proceeded to Moulmein with a cargo of 200,000 danee leaves, which were then used for thatching the roofs of government buildings. These leaves which had cost him Rs. 800 were sold in Moulmein for Rs. 3,000.

When in Moulmein, he was informed that a ship was required for taking convicts to Mergui and Tavoy, and he was lucky enough to secure the contract, but before the latter was ratified his ship had to be inspected; let us here leave Aide to tell his own story which he does with a naiveté worthy of the greatest of English diarists:—

"Fearing that the sails which had been patched with common mats might be an objection, and not having time to make new sails, as the rainy season was advancing, I went and purchased a good quantity of Madras coarse cloth and had the sails rolled up in such a way that nothing of the mats could be perceived."

By these means the inspection passed off satisfactorily, Aide got his contract, and obviously thought none the worse of himself for this subterfuge.

He then sold the vessel and we find him trading with the Straits in Mergui produce, *viz.*:—elephant tusks, tortoiseshell, sea-slugs and fish-maws and doing very well up to the year 1837, when his friend Colonel McLeod was transferred.

## A MERCHANT PIONEER.

Trouble then began with a considerable loan advanced to a Chinese syndicate who were shipping sapan wood to Calcutta, for the ship was lost in a gale with all on board, and Aide got practically nothing out of the suit which he won, as the relatives of the Chinaman 'successfully secreted their property with others'.

Aide's next misfortune arose from a verbal promise made by a certain Mr. C — to give him a contract for shipping government coal to Singapore but the promise was never fulfilled and Aide, who had refused other valuable cargoes and delayed his boat till late in the season, lost heavily.

He then sent his ship to the Nicobars for a cargo of coconuts, but on her return she was lost in a gale.

In an effort to restore his fortunes, he sold a large quantity of jewels and silver plate and purchased a small estate just outside Mergui, where he planted 3000 coconut trees, but when the plantation was showing every sign of becoming a profitable venture, the Assistant Commissioner (un-named) heard that there was tin on this plantation, and having reported the fact to Moulmein, without stating that the tin was on a private estate, received orders to build a jail on the spot and put a hundred convicts to work the mine.

Aide of course protested, but was ordered to leave the court unless he wished to be fined; he pathetically writes in his diary:—

"Oppressed as I was, without any chance of obtaining redress, I saw my plantation go to ruin." Subsequently he brought a suit against the Assistant Commissioner and won it, but the damages that he secured were but trifling compared to the loss that he had incurred.

Aide, as always, took his misfortune philosophically:—

"God forgive," he writes, "those who have wronged me; everything passes very quick in this world here below, and sooner or later every one of us will be brought to a heap of dust." It is satisfactory to know that long before that happened he had the joy of hearing that this Assistant Commissioner had been cashiered. Once again he set himself to increase his capital and things went very well until the arrival of new Deputy Commissioner whom unfortunately Aide does not name. This is how the merchant describes the new comer.

"This man at first appeared to be very good, but some time after his arrival, he gave himself rather too much to the nectar of the day and in one of his nectariel (*sic*) fits, he oppressed me in such a shameful manner that he was inflicted by Sir Archibald Bogle with the most disgraceful reprimand that a Government officer ever received, and the most noble the Marquis of Dalhousie visited him with another as severe as ever was inflicted, and subsequently ordered his dismissal from the Civil Service of these Provinces."



Then comes a gap in the history and in 1856 he records his last knock at the hands of Fate, for in March of that year "a dreadful fire broke out by which I lost a very fine house and all the property I possessed, not even saving my wearing apparel."

The little diary ends on a note of despair :—

"Had this last calamity taken place a few years previous, I would have thought nothing of it and bore it with a manly fortitude, but in the advanced and declining age in which I am' (he was then 58) 'this last sad misfortune was felt by me more than all the former and numerous ones with which I have been visited in my long career.'"

Poor Peter Aide, you had some hard knocks, and yet, as we follow your fortunes in that little time-stained diary, we are left with the impression that yours was not so sad a lot, and that despite the ordeals by fire and water and the machinations of diabolic officials, there were many red-letter days in your life.

And although your diary tells us nothing of your retirement, we like to picture you in the twilight of life, comfortably settled, as we know that you were, in that home of yours at Moulmein, with a wife to minister to your needs and children round your knee—children who perhaps listened with wide open eyes to the tales of Daddy's master-strokes, to that glorious deal in danee-leaves, that 'corner' in beer on the Rangoon wharf or even that little affair of the patched sails.

J. M. SYMNS.

## AN OLD TEMPLE AT LAWSAWK (လော့ဆွေ),

### Southern Shan States.

---

It is well-known that some Burmese kings of Pagan penetrated into the Shan States and left, in the Yawnghwe valley at least, traces of their occupation in the form of temples of the Pagan type, characterised in particular by the radiating arch (a feature not to be found in temples of the Konbaung dynasty), with the bricks of the voussoir laid flat against the arch-face.

On a recent visit to Lawksawk\*, some 40 miles north of Yawnghwe, Mr. Pearn and I were pleased to discover yet another temple of this type, the Shwe-onhmin Paya (fig. 1), and several other ruins and gateways, one of which, illustrated in fig. 2, shews clearly the peculiar structure of the arch. The temple, it is true, has been added to in later times, additions being clearly marked by the corbelled arch instead of the voussoir. A plan of the ground-floor is shewn in fig. 3; the outer corridor is modern, except for the archways in the centre; the rest of the ground-floor is clearly after the Pagan model. The cella at the top also dates from Pagan; but in between the two storeys is a curious *wingaba*, or maze of low corridors running round and round the structure and leading finally up to the cella at the top. Here again the corbelled arches shew the *wingaba* to be modern; I have not found anything of the kind at Pagan.

Mr. and Mrs. J. Bennie, who accompanied us, were kind enough to help in the preparation of the plan, and I am indebted to them also for the photographs.

---

\*It is curious to note that north of Nyaung-u, just above the Kyaukku Onhmin, there is a small temple now called the Yapsouk Pays, containing an interesting ink-inscription *List 184, U.B.J. 333-4*), dated 1220 A.D. What its connection with Lawksawk, if any, amounts to, I do not know. The Lawksawk Sawbwagyi has an interesting Chronicle (or *parabaik Sittan*) of the town, which he was kind enough to shew me. I hope to obtain a copy of it shortly. It contains a page or two about the coming of Pagan kings to Lawksawk, but the stories told appear to be of the usual mythical type.

The Shan States, so far as I am aware, have never been archaeologically explored, and it would be interesting to hear reports of buildings thereabouts shewing arches of the kind illustrated in fig. 2. Are any such to be found, *e. g.*, in Hsipaw, Hsenwi, Lashio or Loikaw? Not having been to any of these places, I cannot say; but no doubt there are readers of the Journal who can enlighten me. At Mongnai (မုံနှဲ), where traces of Burmese occupation a hundred years ago abound, I have not discovered any temples of the Pagan type (my search may not have been complete); but we know from the Dhammarajaka stone inscription (*List* 154a<sup>6</sup>, *U.B.I.* 257), that Jeyyasura II, nowadays known as Narapatisithu (*fl.* c. 1173-1210 A. D.), claimed to have ruled "as far as the Salween to the East." In the absence of ancient inscriptions, this Pagan type of arch will probably be our best evidence of the extent of Burmese penetration eastwards at this period. I do not think such arches are to be found anywhere to the east of Burma except as the result of Burmese occupation.

G. H. LUCE.



Fig. 1. Shwe-onhmin Paya, Lawksawk.

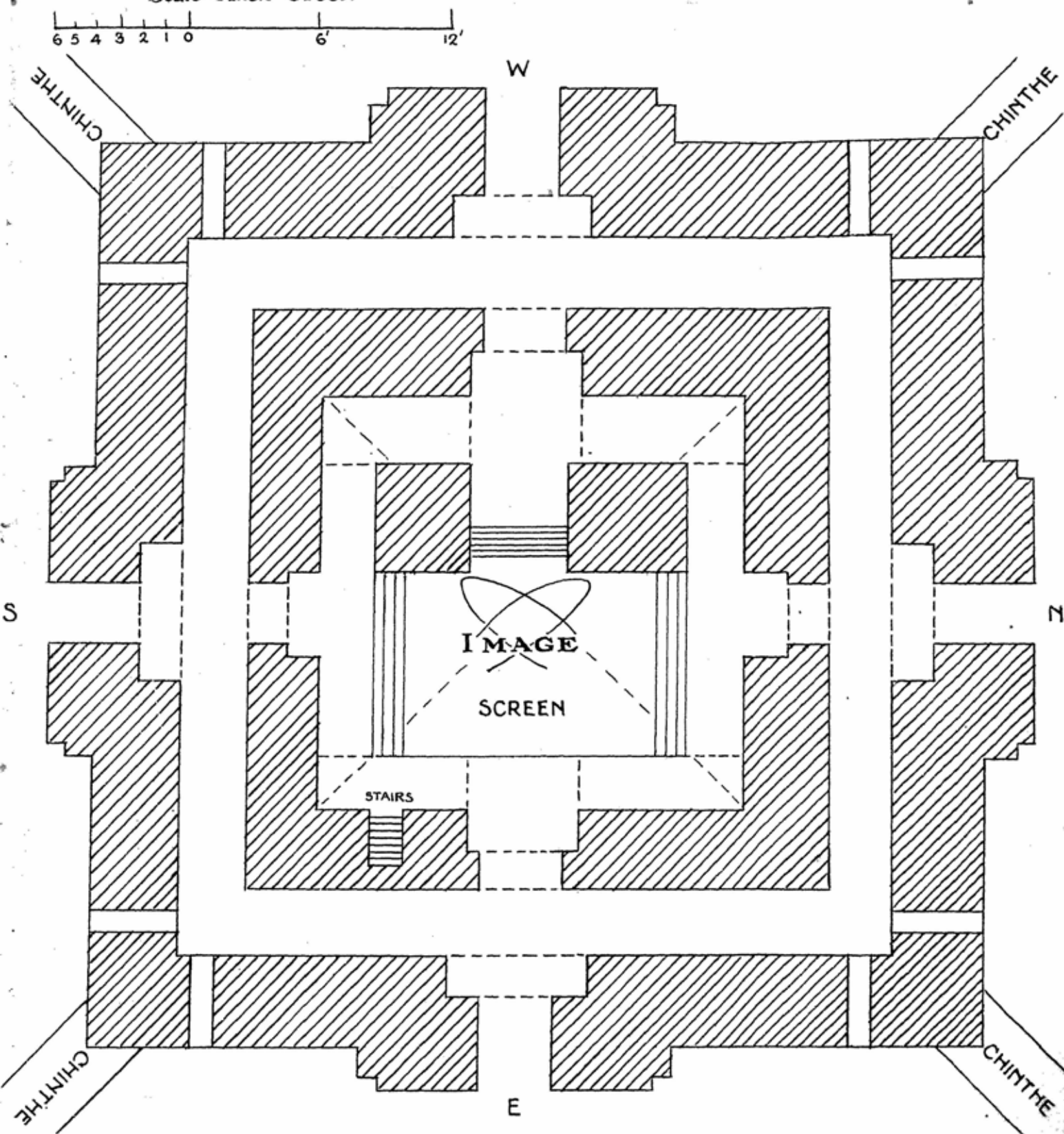


Fig. 2. Gateway near Shwe onhmin Paya



FIG.3. LAWKSAWK SHWE-ONHMIN PAYA.

Scale - 1 Inch = 6 Feet.





## FLOATING LIGHTED TOY-BOATS.

From

SIR RICHARD TEMPLE, BT.,  
London.

To the Secretary,

BURMA RESEARCH SOCIETY,  
Rangoon.

DEAR SIR,

I am deeply interested in searching into the origin of the practice of floating lighted toy-boats on rivers in India and elsewhere.

So far as my information goes--though I am not satisfied with it—it is not a very old practice, apparently not older than 1000 A.D. It appears to have come from countries west of India with the Muhammadans about that date or perhaps two centuries earlier, and in connection with the cult of the mysterious al-Khidr, usually known in India as Khwāja Khizar and even as Rājā Kidār. But it is a common custom on the Irrawaddy and elsewhere nowadays. I am anxious to ascertain its history there as definitely as may be, especially its origin and date.

Can you or anyone in the Society quote texts or let me have the title of books that will give me the information I require?

Yours very truly,

*16th March 1928.*

R. C. TEMPLE.



## KAREN SING-SONG PARTY.

A friend of mine gave a Party.

At about 8 p.m. some sixteen lassies in the charge of a Matron filed into the spacious compound of my friend's estate, and set all mute in a row.

My friend provided lights to show the village beauties to advantage.

At about 10 p.m. I heard a distant sound of some lads singing, but they did not come in.

Next I heard another group of lads singing without entering the compound.

My friend told me that the lads were waiting for others lagging behind from remaining villages notified so as to give time and equal chances to all.

At last the lads each armed with a *dah* made their entry.

First, a group of lads wheeled round and round, singing a Chorus at the same time, in the presence of the lassies.

Next, a bare-bodied lad with his longyi tucked up walked stately in front of the row of lassies and clapping both his arms—after the fashion of Burmese boxers jumped off the ground into darkness.

This display of manly prowess is gone through by every lad, one by one, in the group, so that the lassies may select any suitable candidates for their partners in the competition or in life.

The remaining groups repeated the same procedure.

The lassies now began to sing :—

“Why have you, lovely Doves, not yet alighted on a branch of this tender plant?”

The two lads accepting the challenge promptly took their seats opposite a pair of lassies whom they fancied. If the lads' suit be rejected, they readily and without resentment vacate their seats for others to step into their shoes. The pair of lassies with a shawl held in their joint hands as a sort of screen to sing behind, sang a duet :

“Can you for love pluck the Pole Star for us?”

The pair of lads returned an answer also in a duet :

“Yes, Darling, we can; but as the distance is great we would like something to eat on our way. Will you therefore for love prepare us a meal?”

## KAREN SING-SONG PARTY. •

The pair at a loss to reply is the loser in the Competition in which each party tries to go one better than the other.

The duet-duel lasted throughout the night and my friend entertained them to light refreshments at dawn.

I was struck with the lads' consideration for others and gentlemanly behaviour and orderly manner. None of the lads were rude to the lassies; and there was no sign of jealousy nor malice and although they carried a *dah* for purposes of protection or defence in the way, there was no quarrel, no occasion for offensive purposes.

The Karen is a poetical race and the songs composed by their Sayas for the lads and lassies were as a rule, ennobled by sentiments of love. This noble institution of bringing opposite sexes together for love making or for match making purposes probably dated from the time when villages were isolated and communications difficult and defective.

The Burmans or Talaings cannot boast of such an institution of which the Karen may well be proud.

Can any of your readers trace a similar institution among the cognate tribes of Burma or elsewhere?

S. Z. A.



# PROCEEDINGS

## OF THE

### BURMA RESEARCH SOCIETY.

*A Meeting of the Executive Committee of the Burma Research Society was held at University College (Commissioner's Road) on Thursday, July 5th, 1928, at 6-30 p.m.*

#### PRESENT.

1. C. W. Dunn, Esq., C.I.E., I.C.S. (*President*).
2. J. S. Furnivall, Esq.
3. Prof. D. G. E. Hall.
4. Mr. A. Cassim (*Hon. Treasurer*).
5. Mr. Meer Suleiman, M.A.
6. U Tun Pe, M.A., B.L., M.R.A.S.
7. U Po Sein, A.T.M.
8. Saya U Thein.
9. G. H. Luce, Esq.
10. Mr. B. R. Pearn (*Hon. Secretary*).

#### MINUTES.

1. Read and confirmed the minutes of the previous meeting, held on February 18th, 1928.

2. Arising from the minutes,

- (a) *Resolved*, on the motion of Mr. Furnivall, that in the Resolution in No. 10 of the minutes of the meeting held on 18th February, 1928, for the words "on the question of the basis and terms.....(down to the end of the minutes)" there be substituted "on the question as to the terms on which members of the University may have access to the books in the Library of the Society and whether reciprocity of access is feasible with a view to avoiding unnecessary duplication."
- (b) *Resolved*, on the motion of the Honorary Treasurer, that paragraph 14 in the minutes of the meeting held on February 18th, 1928, be rescinded.

3. Recorded letter No. 1065/1-S, dated 14th April 1928, from the Private Secretary to His Excellency Sir Charles Innes, intimating that His Excellency will be pleased to become the Patron of the Society.

4. Recorded letter No. 165/H.C., dated 26th May 1928, from the Secretary, Indian Historical Records Commission, Calcutta, forwarding

a set of printed sheets of Bengal and Madras Papers, and *resolved* that the papers be bound.

5. *Resolved*, on the motion of Mr. Luce, that a Sub-Committee consisting of U Po Sein, Mr. Furnivall and the Hon. Secretary, be appointed to report on means for bringing before the public the objects of the Society, and for increasing Membership.

6. *Resolved*, that the existing members of the Sub-Committee be re-elected.

7. *Resolved*, that the existing members of the Text-Publication Sub-Committee be re-elected with the addition of Saya Thein.

8. *Resolved* that the Honorary Secretary be directed to consult with the President of the Text-Publication Sub-Committee with a view to drawing up rules for that Sub-Committee.

9. Read and recorded letter No. 425/IAF-17, dated the 17th May 1928, from the Registrar, University of Rangoon, on the subject of a grant of financial assistance towards the publication of Classical Texts in Burmese.

10. Read and recorded letter No. 442/AF-17, dated the 8th May 1928, from the Registrar, University of Rangoon, regarding the question of financial assistance towards the publication of a science journal for Burma, and Prof. Meggitt's letter arising out of the Registrar's letter, and *resolved*, that with reference to letter No. 442/AF-17, the Secretary be directed to discuss the matter further with the Registrar of the University, and that meanwhile Dr. Meggitt be requested to hold his resignation in abeyance.

11. Recorded letter No. 857/14-B.P., dated 7th June 1928, from the Registrar, University of Rangoon, with regard to the Society's Library.

12. Resolved that an Ordinary Meeting be held; that His Excellency Sir Charles Innes be requested to take the Chair at that meeting; that His Excellency be requested to fix his own date, in August if possible, and that Mr. Furnivall be asked to read a paper on that occasion.

13. *Resolved* that the President, Honorary Treasurer, and Honorary Secretary, be asked to consider the steps to be taken in connection with Post Office Cash Certificates held by the Society, and to reinvest the money at their discretion.

14. *Resolved* that sanction be given for the printing of 1,000 copies of the First Chinese Number of the Society's Journal, instead of the usual 650.

*The 7th July 1928.*

B. R. PEARN,  
*Honorary Secretary.*

*Minutes of a Meeting of the Executive Committee of the Burma Research Society held at University College (Commissioner Road), on Thursday, September 6th, 1928, at 6-30 p.m.*

PRESENT.

1. J. S. Furnivall, Esq.
2. Prof. Pe Maung Tin.
3. A. Brookes, Esq.
5. Mr. Meer Suleiman.
6. Saya Thein Gyi.
7. U Tun Pe.
8. Prof. F. J. Meggitt.
9. G. H. Luce, Esq.
10. B. R. Pearn, Esq., *Hon. Secretary.*

In the absence of the President, Mr. Furnivall was elected to the Chair.

MINUTES.

1. Confirmed the Minutes of the previous meeting held on July 5th, 1928.

2. *Resolved* that a definite scheme for a grant for financing the Scientific Number of the Society's Journal be laid before the authorities of the University.

3. *Resolved* that the heading of Chapter V of the Society's Rules shall read "The Managing Sub-Committee", and that after Rule 20 shall be inserted a new Chapter as follows :--

THE TEXT PUBLICATION SUB-COMMITTEE.

1. It shall be the duty of the Text Publication Sub-Committee to bring out critical editions of rare or unpublished texts in languages connected with Burma. Translations of approved texts will also be undertaken.
2. Members of the Sub-Committee shall be appointed by the Executive Committee.
3. The Sub-Committee shall consist of a Chairman, a Secretary, and not more than six members of the Society.
4. The Chairman shall be also the general editor of the Series.
5. The fund of the Sub-Committee shall be separate from the general fund of the Society ; but payment to an editor of an honorarium exceeding Rs. 100 shall require the sanction of the Executive Committee.

6. The minutes of every meeting of the Sub-Committee shall be reported to the Executive Committee for confirmation, and the accounts of the Sub-Committee be submitted to the Executive Committee at its last meeting before the Annual General Meeting each year.
4. *Resolved* that discussion of the question of the re-investment of the Society's Post Office Cash Certificates be postponed till the next meeting.
5. *Resolved* that no alteration be made in the price at which copies of the Glass Palace Chronicle is sold to members.
6. *Resolved* that the authorities of the University College be approached on the subject of the housing of the Society's Library.
7. *Resolved* U Po Kya be invited to read a paper at the next Ordinary Meeting of the Society, to be held in November; and failing U Po Kya, Professor Meggitt.
8. *Resolved* that the Hon. Treasurer be requested to report at the next meeting the names of members whose subscriptions are overdue; and that a report on this subject be presented annually at the last meeting of the Executive Committee previous to the Annual General Meeting.
9. Confirmed the report of the Dictionary Sub-Committee, and *resolved* that this report together with Prof. Pe Maung Tin's report on the same subject, be submitted to Government.
10. *Resolved* that the reports of the Dictionary Sub-Committee be published in the Journal of the Society.

B. R. PEARN,  
*Honorary Secretary.*

---

*The Twentieth Meeting of the Text Publication Sub-Committee of the Burma Research Society was held at Pinya Hall, University College, Prome Road, on Saturday, the 22nd September 1928, at 8-30 a.m.*

PRESENT.

1. Prof. Pe Maung Tin, M.A., B.Litt., I.E.S. (*Chairman*).
2. Prof. G. H. Luce, B.A., I.E.S.
3. J. S. Furnivall, Esq., M.A., I.C.S. (retd.)
4. U Po Sein, A.T.M.
5. A. Cassim, Esq., B.A., (*Secretary*).

MINUTES.

1. Confirmed the minutes of the 19th meeting of the Sub-Committee held on the 15th December 1927.

2. (a) With reference to the publication of Maung Kala Mahayazawingyi, Vol. II, it was *resolved* to ask the Editor to expedite the work so that the volume should be out as early as possible before June 1929.

(b) The General Editor reported that the Kyigan Myittaza was nearly ready for the press.

(c) *Resolved* that U Tun Pe, M.A., B.L., M.R.A.S., be asked to report if he expects to finish the work of editing U Ponnya's Myittaza by the end of this year, and if unable to do so whether he has any objection to some other editor doing the work.

3. The General Editor reported the appearance of the following works in the Series since the last meeting :—

Pyinsa Papi Yagan, Selections from the Jataka Stories, Mahathutathoma Pyo, and Shwe Pyi Zo Wutthu.

4. *Recorded* the following rules for the Text Publication Sub-Committee passed by the Executive Committee at its meeting of the 6th September 1926 :

#### THE TEXT PUBLICATION SUB-COMMITTEE.

- (1) It shall be the duty of the Text Publication Sub-Committee to bring out critical editions of rare or unpublished texts in languages connected with Burma. Translations of approved texts will also be undertaken.
- (2) Members of the Sub-Committee shall be appointed by the Executive Committee.
- (3) The Sub-Committee shall consist of a Chairman, a Secretary, and not more than six members of the Society.
- (4) The Chairman shall be also the General Editor of the Series.
- (5) The fund of the Sub-Committee shall be separate from the general fund of the Society ; but payment to an editor of an honorarium exceeding Rs. 100 shall require the sanction of the Executive Committee.
- (6) The minutes of every meeting of the Sub-Committee shall be reported to the Executive Committee for confirmation, and the accounts of the Sub-Committee be submitted to the Executive Committee at its last meeting before the Annual General Meeting each year.

5. Considered Circular No. 14, dated the 8th September 1928, and *sanctioned* the publication of the following works in the Text Publication Series :—

- (a) The *te-dat* and *Sadan* of U Ponnya—Editor, Saya Yeik.



- (b) Mahathilawa Pyo of Monywa Sayadaw, Editors, Saya Lin, A.M.P., and Maung Ba Maung, B.A.
- (c) *Yadu* by Seindakyawthu—Editors, Saya Pwa and Maung Nyun, B.A.
- (d) *Sabebin* by U Lat—Editor, Saya Wa—*subject to the publishers taking all responsibilities with regard to the question of its copyright.*
- (e) *Talaing Gavampati*—edited by Rev. R. Halliday, M.A. In connection with this work it was *resolved* that the General Editor make enquiries from the A. B. M. Press as well as other Presses in Moulmein and elsewhere, which own Talaing types, as to the relative cost of printing 500 or 1,000 copies, and report to the Sub-Committee at its next meeting.

6. *Resolved* to defer the consideration of including the Sagadaungsa Wutthu in the Series pending a detailed report by the General Editor on the question of any existing copyrights in it and the possibility of obtaining other manuscripts for collation.

7. *Resolved* that enquiries be made through the Society's Journal and the "World of Books" for manuscripts of the Monywa Yazawin.

8. *Resolved* that Rev. R. Halliday, M.A., be asked if he would be willing to edit for the Series the *Talaing Rajadirit* collated with the Burmese and Siamese editions.

9. Recorded sanction to the publication of (1) the Yazawin by Twinthin Taikwun, and (2) the Yazawingyaw of Thilawuntha; the cost of the latter to be met out of the University grant.

10. *Sanctioned* the publication of the Jatabon, the cost to be defrayed from the University Grant. *Resolved* also, that the editorship be offered to Mr. C. Duroselle, M.A.

11. The General Editor was requested to study Monywa Sayadaw's 'Paramigan Aphye' and to report to the Sub-Committee at its next meeting on the suitability, or otherwise, of its inclusion in the Text Publication Series.

12. *Resolved* that resolution 6 of the minutes of the meeting held on the 10th August 1927 be cancelled, and that honorarium be paid to an editor on the appearance of the work which has been entrusted to him.

*Resolved* further that the above resolution be made to have retrospective effect so as to provide for the following honoraria to be paid:—

- (1) U Tin, K.S.M., A.T.M.—Rs. 30 for Joint-Editorship of Ommadani Pyo and the Dewagonban Pyazat.
- (2) Mrs. U Po Byu—Rs. 30 for the late U Po Byu's Joint-Editorship of the Ommadani Pyo and the Kandawmingyaung Myit-taza.

- (3) Saya Pwa—Rs. 95 for his editorship of the Selections from Jataka Stories, Uteinna Pyo, Yesagyo Khon Pyatton, and for joint-editorship in the production of Kandawmingyaung Mytitaza.
- (4) Saya Yeik—Rs. 25 for editing the Pyinsa Papi Yagan.
- (5) Saya Lin, A.M.P.—Rs. 25 for editing the Mahathutathoma Pyo.
- (6) Saya Wa—Rs. 25 for editing Shwe-Pyi Zo Wutthu.

AHMED CASSIM,

*Secretary.*

*The 24th September 1928.*

## LIST OF BOOKS RECEIVED.

- Zeitschriften der Deutschen Morgenländischen Gesellschaft, Neue Folge.  
Band 7—Heft 2. (Band 82).
- List van Aanwinsten der Bibliotheek van het Museum—Juni 1928.
- Bhandarkar Oriental Research Institute, Poona—Report for 1927-28.
- Bulletin of Applied Botany, of Genetics and Plant-Breeding, Vol. XVIII,  
Nos. 3, 4, 5 ; Vol. XIX, Nos. 1, 2.
- Le Musée Guimet (1918—27).
- Bulletin de la Maison Franco-Japonaise Series Française—II.
- Journal of the Royal Asiatic Society of Great Britain and Ireland, 3rd and  
4th Quarters, 1928.
- Journal of the Royal Anthropological Institute of Great Britain and Ireland,  
Vol. LVIII—Jan.-June 1928.
- Malayan Branch of Royal Asiatic Society, V, Part IV—Index to Journals 1  
to 86, Vol. VI, Part I.
- Oudheidkundig Verslag 1927.
- Paṭiccasamuppatt (Talaing).
- Dhamma Saṃgaha                    ,,
- Dhammarāthi                       ,,
- Lokasamutti                       ,,
- Narasāsaṇa                       ,,
- Buddhavaṇa, 2 parts               ,,
- Lōkasiddhi                         ,,
- Byādeiktaw                        ,,
- Lwait le paw Samein Puthan (Talaing).
- Talaing Thinhōngyi               ,,
- Lekkhaṇāye Thonba               ,,
- Rules for Samanes                ,,
- Maha Pareikkya                   ,,
- Selections from the Inscriptions of Pagan.
- Mitteilungen der Anthropologischen Gesellschaft in Wien, LVIII,  
Band III, IV, V Heft.
- Indian Antiquary, September to December 1928.
- Revista de la Sociedad Geografica de Cuba, Nos. 1, 2, 1928.
- Epigraphia Birmanica, Vol. III, Part II, with a set of plates I—XXIV.
- Man in India, Vol. VIII, Nos. 2, 3.
- Buddhist India, Vol. II, No. 2.
- Notes on Currency Coinage among the Burmese, by Sir R. C. Temple,  
1921 edition and 1928 edition.
- Journal of East India Association, Vol. XIX, No. 4, October 1928.
- Bulletin of the School of Oriental Studies, London Institution, Vol. V,  
Part I.
- T'Oung Pao, No. 1928, Vol. XXVI.
- A Triennial Catalogue of MSS collected during the triennium 1919-20  
to 1921-22, for the Government Oriental MSS Library, Madras,  
Vol. IV.

- Bulletin des Amis du Vieux Hue 15<sup>e</sup> Anne No. 2, Avril Juin 1928.  
The Regions of the best varieties of spring and winter wheats of U.S.S.R.  
The Annals of the Tooth-Relic, by A. Nell.  
Memoirs of the Archaeological Survey of India—  
    No. 33—Pallawa Architecture, Part II.  
    No. 34—A New Inscription of Darius from Hamadan.  
Journal of the Siam Society, Vol. XXI, Part III.  
Koninklijk Bataviaasch Genootschap van Kunsten en Wetenschappen  
    1778—24, April 1928.



If you wish to become a member or to propose a friend for membership, you are requested to sign the attached slip and forward it to the Hon. Secretary. If not, please pass on the forms to one of your friends.

## BURMA RESEARCH SOCIETY.

Patron:

HIS EXCELLENCY THE GOVERNOR OF BURMA.

THE BURMA RESEARCH SOCIETY was founded in 1910. Its objects are the study and encouragement of Art, Science, History and Literature in relation to Burma, and the promotion of intercourse between members of different communities with a common interest in such objects. Meetings are held periodically at University College, Rangoon, at which papers are read. The principal work of the Society is the publication of a Journal, which appears thrice a year and is supplied free of charge to members. Articles by well-known scholars such as Messrs. C. O. Blagden, C. Duroiselle and R. Halliday have appeared in the Journal, but the Editor is chiefly dependent for contributions on Burmese and English members of the Society stationed in various parts of Burma. The articles are mostly on Burmese history, archaeology, literature, art, language, philosophy, religion and folklore. They are of interest not only to scholars but also to general readers who are attracted by Burma and its people. The Editor welcomes contributions from members who have made a study of any special subject or locality. Illustrated articles and articles in Burmese are always welcome. Apart from its Journal, the Society is also publishing Burmese literary and historical works and translations, and in this branch of the activity enjoys the assistance of the best Burmese scholars. It possesses a growing library for the use of members.

The Society is dependent for its funds entirely upon the subscriptions of members. The subscription is Rs. 15 yearly, payable in advance, or a single sum of Rs. 150.

The Society invites applications for membership. Anyone who desires to join, may ask a member to propose him, or may write to the HONORARY SECRETARY, BURMA RESEARCH SOCIETY (Bernard Free Library), RANGOON. The attached form may be used.

To

THE HONORARY SECRETARY,

Burma Research Society,

(Bernard Free Library), RANGOON.

\* I propose for election as a members of the BURMA RESEARCH SOCIETY the name of.....Designation.....  
Address.....

\* I desire to be elected a member of the BURMA RESEARCH SOCIETY.

Name.....

Designation.....

Address.....



THE  
GLASS PALACE CHRONICLE  
OF THE  
KINGS OF BURMA  
(HMANNAN YAZAWIN)

TRANSLATED BY  
PE MAUNG TIN

AND  
G. H. LUCE,

PUBLISHED BY THE OXFORD UNIVERSITY PRESS  
FOR THE TEXT PUBLICATION FUND OF THE BURMA RESEARCH SOCIETY.

The *Glass Palace Chronicle*, the most important of the native histories of Burma, was compiled in 1829, by a committee of scholars appointed by King Bagyidaw of Burma, who based their work on earlier chronicles, inscriptions, and other ancient records.

The present translation omits the first two parts of the Chronicle, as they merely retell the story of Buddhism and of the Buddhist kings of Ancient India, and begins at the point where the story moves to Burma. The third part opens with the history of the three Burmese kingdoms of Tagaung, Tharehkittara and Pagan. The fourth and fifth parts of the present volume cover perhaps the most interesting period of Burmese history, that of the kingdom of Pagan—the city on the middle Irrawaddy a hundred miles below Mandalay, whose noble temples and vast ruins still, astonish visitors. The volume closes with the fall of Pagan (1287 A. D.), consequent on the invasion of Burma by the armies of Khublai Khan. It is hoped that the response to this publication will justify the Burma Research Society in continuing the translation and adding notes in subsequent volumes.

**ORDER FORM FOR MEMBERS ONLY.**

**Special Reduced Price for Members of the B. R. S. Rs. 5 per copy  
(in paper covers).**

To

**THE HONORARY SECRETARY,**

**Burma Research Society.**

(Bernard Free Library), RANGOON.

DEAR SIR,

I am a member of the Burma Research Society. Please send  
me.....<sup>copy</sup><sub>copies</sub> of the translation of the Glass Palace Chronicle for  
V.P.P., which I enclose the sum of Rs.....

Name.....

Designation.....

Address.....





# BURMA RESEARCH SOCIETY

## PUBLICATION SERIES.

*General Editor*—Professor PE MAUNG TIN.

### *Volumes Already Published.*

Burmese  
Texts No.

1	Owada-du Pyo by Seinda Kyawthu—Pyigyimundyne Press	Rs. A. 0 6
2	Dewagomban Pyazat by U Kyin U—Aungzeyatu Press....	0 6
3	Ommadandi Pyo by Hsameikkhon Ywaza—Pyigyimundyne Press	0 8
4	Kandaw Mingyaung Myittasa—Kawi Myet-hman Press	1 0
5	Maung Kala Mahayazawingyi Vol. I—Pyigyimundyne Press	4 0
6	Padetha Thigyin by U Kyin U—Pyigyimundyne Press ....	0 4
7	Papahein Pyazat—Pyigyimundyne Press	0 6
8	Yezagyo Hkondaw Pyatton—Hanthawaddy Press	1 4
9	Uteinna Pyo by Monywe Sayadaw	2 4
10	Pyinsa-papi Rakan by U Shwe Ni—Aungzeyatu Press ....	0 8
11	Selections from Jataka Stories—Hanthawaddy Press	2 4
12	Thutathoma Pyo by Hsameikkhon Ywaza—Sun Press	1 8
13	Shwe Pyizo Wuttu by U Lat—Kawi Myet-hman Press ....	2 4

[*Translation into English*: The Glass Palace Chronicle. A translation of the Hmannan Yazawin by Pe Maung Tin and G. H. Luce, Oxford University Press].

[The General Editor would be grateful to receive information about copies or manuscripts of U Kyin U's Winkanta Zat and U Ponnya's Myittaza and other rare works.]



# THE BURMA RESEARCH SOCIETY.

(FOUNDED 1910)

*For the Study and Encouragement of Arts, Science, History and Literature in relation to Burma.*

## PATRON.

HIS EXCELLENCY SIR CHARLES ALEXANDER INNES, K.C.S.I., I.C.S.

## COUNCIL.

### *President.*

C. W. DUNN ESQ., C.I.E., I.C.S.\*

### *Vice-Presidents.*

U SHWE ZAN AUNG, B.A., K.S.M., A.T.M.  
THE HON'BLE MR. JUSTICE U BA, B.A., K.S.M.  
J. S. FURNIVALL, ESQ., I.C.S. (Retired).

### *Honorary Secretary.*

B. R. PEARN, M.A.\*

### *Honorary Treasurer.*

AHMED CASSIM, ESQ., B.A.\*

### *Honorary Editors and Librarians.*

PROF. PE MAUNG TIN, M.A., B.LITT., I.E.S.\*  
PROF. F. J. MEGGITT, M.Sc., Ph.D., I.E.S.\*

### *Executive Committee.*

The Office Bearers of the Society and

U TIN, K.S.M., A.T.M.	D. J. SLOSS, ESQ., M.A., C.B.E., I.E.S.
L. F. TAYLOR, ESQ., M.A., I.E.S.	Prof. D. G. E. HALL, M.A., I.E.S.*
U. E. MAUNG, M.A., I.L.B., <i>Bar-at-Law</i>	S. G. GRANTHAM, ESQ., B.A., I.C.S.
THE HON'BLE MR. Justice U MYA <i>BU, Bar-at-Law</i>	MEER SULEIMAN, ESQ., M.A.
U PO SEIN, A.T.M.*	U MAUNG GALE, (8), K.S.M.
U TUN PE, M.A., B.L., M.R.A.S.*	G. H. LUCE, ESQ., M.A., I.E.S.
	J. CLAGUE, ESQ., I.C.S.
	U SET, B.A.
	A. BROOKES ESQ., M.A., I.E.S.

### *General Committee.*

The Members of the Executive Committee and

M. S. COLLIS, ESQ., I.C.S.	D. B. PETCH, ESQ., I.C.S.
U THEIN	U SAN SHWE BU,
MAJOR C. M. ENRIQUEZ.	CHAS. DUROISSELLE, ESQ., M.A.
U KYI O, B.A., K.T.M., K.S.M.	U THA TUN AUNG, B.A.
TAW SEIN KO, ESQ., C.I.E.	J. A. STEWART, ESQ., M.A., I.C.S.
H. F. SEARLE, ESQ., I.C.S.	U HLA, B.A.
DR. O. HANSON,	U THA KIN,
	G. E. HARVEY, B.A., I.C.S.

\*Members of the Sub-Committee.

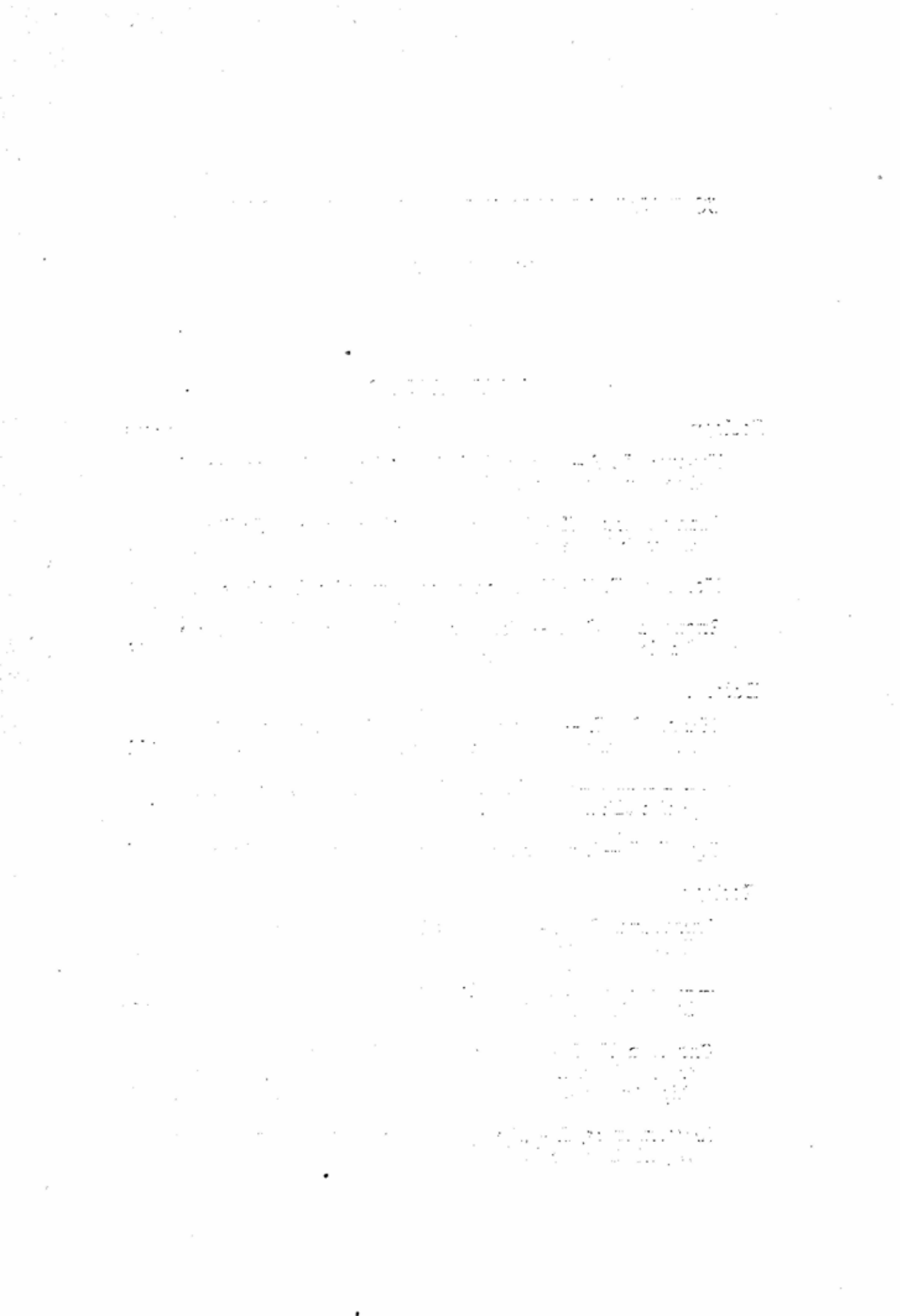


# JOURNAL OF THE BURMA RESEARCH SOCIETY.

Vol. XVIII, Part III.

## CONTENTS.

Zoology	PAGES.
KHANNA, L. P.— <i>Taenia hydatigena</i> , the larval tapeworm of sheep and goats in Rangoon .. .. .	75
SUBRAMANIAN, K.—On a New Tapeworm ( <i>Raillietina rangoonica</i> ) from the Fowl .. .. .	78
NORTHUP, F. E.—Notes on some trematodes from bats ..	80
SHORTRIDGE, G. C.—List of mammals obtained in Myingyan District .. .. .	98
<b>Botany.</b>	
HANDA, M. R.—A short account of the filamentous Green Algae from various places in Burma .. .. .	102
—————AND KHANNA, L. P.—Variations in <i>Mimosa pudica</i> (Linn.) .. .. .	110
PAL, B. P.—A preliminary note on Burmese Charophyta ..	112
<b>Geology.</b>	
CHATTERJEE, S. P.—The physical Geography of the Girnar Hills, Kathawar .. .. .	116
—————The geological reconnaissance in the Sohawal State, Central India .. .. .	120
CHHIBBER, H. L.—A short note on the Limestone Caves in the Neighbourhood of Nyaungbinzeik, Kyaikmaraw Township, Amherst District, Lower Burma .. .. .	124
RAMAMIRTHAM, R.—The geology of the country round Nagari, Chittoor District, Madras .. .. .	132



# TAENIA HYDATIGENA, THE LARVAL TAPEWORM OF SHEEP AND GOATS IN RANGOON.

BY

L. P. KHANNA, M.Sc.  
(University of Rangoon.)

During the months of May to November, the writer visited the Municipal Sheep and Goat Slaughter Houses in Rangoon with the intention of working out the life-history of *Taenia hydatigena* (Pallas 1766). Owing to the scarcity of dogs, though a few were dissected, unfortunately no specimens of this species were found. Many other forms were present, the commonest being *Dipylidium caninum*. The scope of the work was thus limited to the various phases of the larval form as found in sheep and goats.

It proved impossible to suggest the source of infection as the sheep and goats are either imported from Calcutta or brought from other parts of the province. The imported animals showed a higher degree of infection than the native forms. The average for the imported animals was 1: 2 for goats and 1: 1.5 for sheep, for the native forms respectively. The maximum number of parasites from any one host was 17. The seasonal effect on the number of parasites in a given host will be clear from the following table :—

Month.	Total number of goats.	Total number of cysts.	Average.	Sheep.	Cysts.	Average.
May ..	17	21	1.23	13	15	1.15
June ..	27	23	0.85	10	7	0.7
July ..	85	212	2.49	38	89	2.34
August ..	164	247	1.51	179	321	1.78
September ..	98	115	1.17	87	84	0.96
October ..	123	203	1.64	99	153	1.53
November ..	63	97	1.54	56	87	1.53

The infected animals did not show any external symptoms. The bladderworms were generally found surrounded by a secondary cyst of harder consistancy and attached to the mesenteries. These are sold in the market together with the attached fat. Though this parasite has been recorded from man (Cobbold 1862, Diesing 1850, Linstow 1878), the latest record is Linstow 1889: the writer is therefore of the same opinion as Railliet (1886) and Stiles (1906) that these are of dubious



validity, due to confusion with other species, and that their presence is in no case harmful to man. This opinion is substantiated by the ingestion of six cysticerci by a volunteer in whom a tapeworm failed to develop.

The bladder of the cysticercus was filled with water and a certain amount of organic material. The average percentage of water in the case for parasites from goats was 97.85, the maximum being 98.81, and the minimum 96.38. There was a difference between this percentage according to the host: in those parasites from the sheep the average was 98.22, the maximum 99.17, and the minimum 97.22. The weight and volume of the cyst also differed.

		GOAT.		SHEEP.	
		Weight in grams.	Volume in c. c.	Weight in grams.	Volume in c. c.
Maximum	..	97.5	103.0	73.0	75.0
Average	..	26.1	27.3	21.3	23.5
Minimum	..	1.5	2.8	3.5	3.8

The rostellum was armed with two sizes of hooks, the shape being like that described by Hall (1919, 28), though the minimum and maximum number of hooks was lower and higher than those given by him. The maximum was 48, the average 34, the minimum 20. The shape was determined according to the formula of Meggitt (1927, 420): the following statement shows the variation.

		GOAT.								SHEEP.							
		Big Hooks.				Small Hooks.				Big Hooks.				Small Hooks.			
		BL	BC	CF	DE	BL	BC	CF	DE	BL	BC	CF	DE	BL	BC	CF	DE
Maximum	..	0.09	0.66	0.79	0.82	0.27	0.64	0.96	1.2	0.09	0.66	0.79	0.82	0.24	0.64	1.1	1.20
Average	..	0.07	0.53	0.59	0.70	0.17	0.45	0.77	0.87	0.06	0.58	0.60	0.68	0.17	0.38	0.74	0.85
Minimum	..	0.04	0.34	0.51	0.58	0.11	0.26	0.63	0.71	0.04	0.34	0.54	0.66	0.10	0.29	0.55	0.67

The size of the large hooks ranges from 0.14mm—0.252mm, that of the small from 0.098 mm.—0.158mm.

The work was done under the direction and guidance of Dr. F. J. Meggitt to whom the writer wishes to acknowledge his indebtedness for his untiring help. He also wishes to express his thanks to the authorities of the Municipal Abbatior for their assistance, without which the present paper would not have been possible.

### References.

- Cobbold, T. S.** (1862). Remarks on all human entozoa. *Proc. Zool. Soc. London*, 288-315.
- Diesing, K. M.** (1850). *Systema helminthum*. Wien.
- Hall, M. C.** (1919). The adult taenioid cestodes of dogs and cats, and of related carnivores in North America. *Proc. U. S. Nat. Mus.* IV, 1—94.
- Linstow, O. v.** (1878). *Compendium der helminthologie*. Hanover.  
 ——— (1889). *Compendium der helminthologie*. Nachtrag. Hanover.
- Meggitt, F. J.** (1927). Report on a collection of cestoda, mainly from Egypt. Part II. Cyclophyllidea: Family Hymenolepididae. *Parasitol.* XIX 420—448.
- Railliet, A.** (1886). *Elements de zoologie medicale et agricole*. Paris.
- Stiles, C. W.** (1906). Illustrated key to the cestode parasites of man. *Bull. Hyg. Lab. U.S. Pub. Health Mar.-Hosp. Serv.* XXV 1—166.

# ON A NEW TAPEWORM (*RAILLIETINA RANGOONICA*) FROM THE FOWL

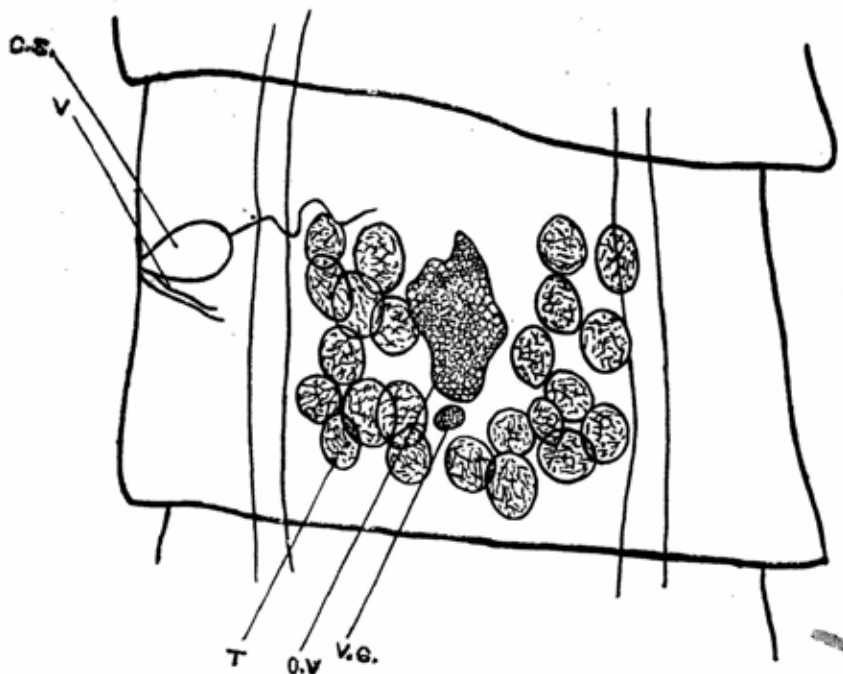
BY

K. SUBRAMANIAN

(*University of Rangoon.*)

The material upon which the following description is based was collected from the intestine of a fowl in Rangoon.

Length 112\*, width 0.7. Scolex 0.34 dia., Rostellum 0.11 dia., extending posteriorly to the anterior margin of suckers, armed with approximately 240 T-shaped hooks, 0.008—0.010 long, in two rows. Suckers armed with 10—12 complete circles of hooks. Proglottides broader than long except end ones which become longer than broad. Genital pores unilateral, at or slightly anterior to proglottis margin. Genital ducts pass between longitudinal excretory vessels. Vas deferens only slightly coiled: Cirrus Sac  $0.089 \times 0.041$  in mature and  $0.096 \times 0.027$  in gravid segments, extending to nerve. Testes 22—24, lateral and posterior to ovary confined within longitudinal excretory vessels. Ovary slightly lobed, in centre of proglottis. Vitelline gland compact. Egg capsules numerous, few extending laterally to longitudinal excretory vessels and each containing a single egg.



C.S., Cirrus Sac; O. V., Ovary; V., Vagina; V. G., Vitelline Gland  
T., Testis.

The possession of T-shaped rostellar hooks, single genital pores and egg capsules place the present form in the Genus *Raillietina* Fuhrmann, 1920. The species most closely allied is *R. retractilis* (Stiles 1895, 195—197) from one of the cotton tail rabbits *Lepus arizonae*. From this the Rangoon

ON A NEW TAPEWORM (*RAILLIETINA RANGOONICA*) FROM THE FOWL.

material may be distinguished by the larger number and smaller size of the rostellar hooks and by the smaller size and greater extent of the cirrus sac as the following table of comparison shows :—

	R. h. no	R. h. size in $\mu$	C. S. size in mm ..	rel. length.
<i>R. retractilis</i> ..	120	12	0.12 x 0.06	not to nerve.
<i>R. rangoonica</i> n. sp.	240	8—10	0.089 x 0.041 in mature and 0.096 x 0.027 in gravid Seg.	to nerve.

Comparing the present species with the other species of *Raillietina* recorded from fowls, the present form can be readily distinguished from all the recorded ones except *R. cesticillus* (Molin 1858) by the number of eggs per capsule and from *R. cesticillus* by the number of hooks, the unilateral condition of the genital pore and the presence of acetabular hooks.

Comparing the present species with the other species of *Raillietina* with unilateral genital pores and one egg in each capsule the present form can be distinguished from *R. compactata* (Clerc 1906), *R. facile*, Meggitt 1926, *R. macropa* (Ortlepp 1922), *R. rhynchota* (Ransom 1909) by the extent of the egg capsules, from *R. appendiculata* (Fuhrmann 1909), *R. blanchardi* (Parona 1898), *R. corvina* (Fuhrmann 1909), *R. cruciata* (Rudolphi 1819), *R. longispina* (Fuhrmann 1908), *R. madagascarensis* (Davaine 1869), *R. paradisea* (Fuhrmann 1908) and *R. sphecotheridis* (Johnston 1914) by the size of the rostellar hooks and from *R. contorta* (Zschokke 1895), *R. numida* (Fuhrmann 1912) and *R. tragopani* Southwell 1922 by the larger number of testis.

The descriptions of *R. circumuncinata* (Krabbe 1869), *R. conopophilae* (Johnston 1912), *R. globocephala* (Fuhrmann 1908), *R. sphaerocephala* (Rudolphi 1819) are inadequate and that of *R. ossipowi* (Skrj. and Pop. 1923) is in Russian. It is therefore necessary to create for the present form a new species for which the name *Raillietina rangoonica* n. sp. is proposed.

In conclusion, I desire to express my gratitude to Dr. F. J. Meggitt, of the University of Rangoon, for very valuable help and guidance.

## References.

- Meggitt, F. J. (1921). On two new tapeworms from the ostrich with a key to the species of Davainea. *Parasitology* XII, pp. 1—24.  
 — (1926). The Tapeworms of the Domestic Fowl. *Jour. Bur. Res. Soc.*, Vol. XV, Part III, pp. 222—243.  
 Stiles, C. W. (1896). A revision of the adult tapeworms of hares and of rabbits *Proc. U. S. Nat. Mus.* XIX 145—235.

\* All measurements in mm.



# NOTES ON SOME TREMATODES FROM BATS

BY

FLORA ELEANOR NORTHUP

(Judson College)

## Introduction.

In 1926 Bhalerao dissected six bats and reported upon their intestinal parasites. In the six bats he found eight species of trematodes representing three different genera which shows that Rangoon bats furnish habitation for a wide variety of flukes. Since this work was all that had been done on Bat Trematodes in Burma, it seemed advisable to undertake a more extensive survey of the Trematodes infesting the bats of this region. Accordingly thirty-nine Chiroptorans were dessected, their Trematodes removed, killed in corrosive sublimate or Bouin, stained in Ehrlichs haematoxylin and mounted or sectioned for study. This paper comprises records of these dissections and notes on the Trematodes secured, together with a list of those previously reported from bats.

I wish to express my sincere appreciation to Professor F. J. Meggitt for the many helpful suggestions and the general encouragement which have made this work possible.

TABLE I.—Dissection Records.

<i>Vespertilio muricola</i>	<i>Lecithodendrium pyramidum</i>	<i>Pycnporus heteroporum</i>	<i>Anchitrema sanguinem</i>	<i>Dicrocoelium hospes</i>	Other Parasites
1	..	.x	..	..	..
2	..	..	.	..	..
3	..	.x	..	..	..
4	..	x	..	..	Ticks
5	..	..	..	..	..
6	.x	..	..	..	..
7	x	..	..	..	..
8	..	..	..	..	..
9	..	x	..	..	..
10	.x	x	..	..	..

## NORTHUP—TREMATODES FROM BATS.

TABLE I.—Dissection Records—*contd.*

<i>Vespertilio muricola</i>	<i>Lecithodendrium pyramidum</i>	<i>Pycnopus heteroporum</i>	<i>Anchitrema sanguineum</i>	<i>Dicrocoelium hospes</i>	Other Parasites
11	x	x	..	..	..
12	..	x	..	..	..
13	x	x	..	x	Nematodes
14	..	..	..	..	..
15	x	x	..	..	„ (encysted)
16	..	x	..	..	..
17	..	x	..	..	..
18	x	..	..	..	..
19	x	..	x	..	..
20	..	x	..	..	..
21	x	..	..	x	..
22	x	..	..	..	..
23	x	..	..	..	..
24	..	..	..	..	..
25	..	..	..	..	..
26	x	x	..	..	..
27	..	x	..	..	..
28	x	..	..	..	Nematodes
29	x	x	..	..	..
30	x	..	..	x	..
31	..	x	..	..	..

The above table indicates that 83·8% of *Vespertilio muricola* are infested by Trematodes: 48·3% by *Lecithodendrium pyramidum*, 61·6% by *Pycnopus heteroporum*, 3·2% by *Anchitrema sanguineum* and 9·6% by *Dicrocoelium hospes*. None of these species have been reported from Burma previously and *Dicrocoelium hospes* has never been found in bats before.

TABLE II.

<i>Rhinopoma microphyllum</i>	<i>Paralecithodendrium longiforme</i>	<i>Paralecithodendrium ovimagnovum</i>	<i>Dicrocoelium hospes</i>	Other parasites
No. 1.	x	x	..	..
2.	..	x	x	Nematodes

Table II shows that at least three species of Trematodes are present in *Rhinopoma microphyllum*. *Paralecithodendrium longiforme* and *P. ovimagnovum* were described by Bhalerao and *Dicrocoelium hospes* is identical with the specimens discovered in *Vespertilio muricola*.

TABLE III.

<i>Scotophilus temminckii</i>	<i>Anchitrema Sanguineum</i>	ex. Stomach	<i>Pycnoperus heteroporum</i>	
No. 1.	x	..	..	
2.	..	x	x	

Table III records three species of Trematodes from *Scotophilus temminckii*, none of which have been recorded from Burma previously. One species from the stomach belongs to an unrecognized genus, hence further work will be required before identification will be attempted.

In addition to the above, four specimens of *Pteropus medius* were dissected. All of these were free from Trematodes.

### ***Pycnoperus heteroporum* (Dujardin 1845.)**

This species was found sixteen times in the intestine of *Vespertilio muricola*, six times associated with *Lecithodemndrium pyramidium*. The internal arrangement of organs was the same as described by Dujardin. He failed to mention the presence of paired vitelline glands, composed of a few large follicles and lying posterior to the ventral sucker.

My measurements were consistantly smaller than those made by Dujardin. This is probably due to the fact that preserved material was

used and that a certain amount of shrinkage had resulted during fixation. Body length 0.66-1.1 mm. body width 0.19-0.33 mm.; oral sucker 0.048 mm. diameter; ventral sucker 0.05 mm.; eggs  $0.016-0.02 \times 0.008-0.012$ .

***Lecithodendrium pyramidum* (Looss 1896.)**

This species was obtained fifteen times from the upper intestine of *Vespertilio muricola*. It agreed with the description of Looss in all characteristics except size. These specimens measured 0.53-0.81 mm. in length, 0.26-0.36 in width. The oral sucker had a diameter of 0.05-0.08 mm. The ventral sucker was usually so obscured by the genital atrium that accurate measurements were very difficult to obtain. The ventral suckers that were measured varied from 0.04-0.06 in diameter. All measurements were made on preserved specimens hence the variations from the measurements of Looss were probably due to shrinkage in fixation.

***Paralecithodendrium ovimagnosum* (Bhalerao 1926)**

On two occasions several specimens of this species were found in the intestine of *Rhinopoma microphyllum*. These agreed in all important respects with the description of Bhalerao. Certain individual variations were noted but these did not seem great enough to justify the creation of new species. The intestinal caeca in one fluke were short and club shaped similar to those described by Bhalerao. In others they were thin and extended laterally to the inner margins of the testes while in a third group they reached the outer margins of the testes. The position of the yolk reservoir was not constant. In most cases it lay dorsal to the ventral sucker but shifted to either the right or left side. The uterine coils were so numerous and so crowded with eggs in all of these specimens that no definite arrangement of coils could be determined and the receptaculum seminis and Laurers canal were obscured.

***Paralecithodendrium longiforme* (Bhalerao 1926).**

On one occasion four specimens of this worm were found in the intestine of *Rhinopoma microphyllum* and associated with them several specimens of *L. ovimagnosum*. These animals differ from the ones described by Bhalerao in two respects. The ootype, instead of lying to the right of the ventral sucker contiguous with the right testis had a median position immediately posterior to the ventral sucker. This may have been the result of contraction since all of the specimens here observed were in a contracted condition. The uterus in these specimens was much wider than indicated by Bhalerao's figure (Fig. 3) and its



coils completely filled the posterior half of the body. For the purpose of the present paper serial transverse sections were cut which make possible a more detailed account of the copulatory apparatus. A coiled seminal vesicle opens into a globular pars prostatica surrounded by numerous unicellular glands. The pars prostatica narrows into a short ejaculatory duct which opens to the outside anterior to the ventral sucker. The opening of the vagina is separate but contiguous with the ejaculatory duct.

#### ***Anchitrema sanguineum* (Sonsino 1894.)**

Specimens of this species were found twice, once in the posterior part of the intestine of *Scotophilus temminckii* (Leach 1821) and once in the hind intestine of *Vespertilio muricola*. The latter was also parasitized by *Lecithodendrium pyramidum*. In the first instance, two stages of worms were found. The immature ones measured 1.5mm. in length and 0.5mm. in width with an oral sucker measuring 0.16mm. in diameter and a ventral sucker measuring 0.11mm. The mature specimens measured from 2.9mm. to 3.4mm. in length and 0.5mm. to 1.0mm. in width with the oral sucker having a diameter of 0.24mm. and the ventral 0.16mm. Operculated eggs measuring  $0.025 \times 0.013$ mm. The immature specimens differed from the mature ones only in the absence of eggs. These forms agreed in every particular except size with the description of Looss 1896. The measurements given here were made on preserved animals and the variations were probably due to shrinkage in fixation.

#### ***Dicrocoelium hospes* Looss 1907.**

Three times a few specimens of this species were found in the gall bladder of *Vespertilio muricola* and once in *Rhinopoma microphyllum*. The general arrangement of the organs corresponded to that of *D. hospes* although there was a great deal of individual variation with regard to shape, size and position of the testes and the character of the vitelline glands. In two specimens from the same host one had lobed testes obliquely placed and the other had had round testes. In another host, some of the worms had lobed testes obliquely placed, some had lobed testes symmetrically placed while others had oval testes either obliquely or symmetrically placed immediately posterior to the ventral sucker. In all specimens the vitelline glands were composed of a few large follicles. In some cases these formed very compact masses posterior to all the other sex organs while in others the masses were more scattered and less definite in outline. In all specimens the intestinal caeca were poorly developed and not easily discerned. Where observed at all they did not extend beyond the anterior lobes of the

vitelline glands. In *D. hospes* described by Looss 1907 the caeca reached as far as the posterior third of the body. This fact may have been due in part to the greater contraction of the specimen figured by Looss. Because in the specimens examined, the caeca were very poorly developed and because the intestinal caeca are so often ignored in descriptions of members of the genus *Dicrocoelium* I am disregarding that difference temporarily and placing the worms in this species provisionally. This size of the Trematodes from the livers of bats was much smaller than of those described by Looss. The bat Trematodes measured 1.6-3.9mm. in length and 0.23-0.46mm. in width with an oral sucker measuring 0.16-0.2mm. and a ventral sucker measuring 0.2mm. in diameter. The eggs measured 0.045-0.05mm.  $\times$  0.021-0.026mm. The differences from the measurements of Looss may have been due in part to shrinkage during fixation. This is the first member of the genus *Dicrocoelium* to be found in bats and it may represent a new species but it does not seem that the creation of a new species is justified until more investigation is made or until more literature becomes available.

### List of Trematodes previously reported from Bats.

#### Family Lecithodendriidae

##### *Acanthatrium*

*nycteridis* Faust 1919

*nycteridis plicati* Bhalerao 1926

*spherula* (Looss 1894)

*Nycteris borealis-borealis*

*Nyctinomus plicatus*

*Megoderma frons*

*Rhinolophus hipposideros*

##### *Anchitrema*

*sanguineum* (Sonsino 1894)

*Megoderma frons*

*Rhinolophus hipposideros*

*Thaiphozous nudiventris*

##### *Lecithodendrium*

*chilostomum* (Mehlis 1831)

*Leuconoe daubentoni*

*Myotis mystacinus*

*M. natterei*

*Pipistrellus pipistrellus*

*Plecotus auritus*

*Pterygistes leisleri*

*P. noctula*

*Rhinolophus hipposideros*

*Vespertilio daubentoni*

*V. gryphus*

*V. murinus*

*V. mystacinus*

*V. natterei*

	<i>V. noctula</i>
	<i>Vesperugo discolor</i>
	<i>V. leisleri</i>
	<i>V. noctula</i>
	<i>V. serotinus</i>
<i>lagena</i> (Brandes 1888)	<i>Leuconoe daubentoni</i>
	<i>Myotis mystacinus</i>
	<i>Pipistrellus pipistrellus</i>
	<i>Plecotus auritus</i>
	<i>Rhinolophus hipposideros</i>
	<i>Vespertilio daubentoni</i>
	<i>V. desyncneme</i>
	<i>V. emarginatus</i>
	<i>V. murinus</i>
	<i>V. mystacinus</i>
	<i>Vesperugo kuhli</i>
	<i>V. nanthusi</i>
	<i>V. serotinus</i>
<i>posticum</i> Stafford 1905	<i>Vespertilio subtilis</i>
<i>pyramidum</i> (Looss 1896)	<i>Rhinolophus hipposideros</i>
<i>urna</i> Looss 1907	<i>Vesperugo kuhli</i>
<i>Limatulum</i>	
<i>limatula</i> (Braun 1909)	<i>Molossus</i> sp.
<i>tubipora</i> (Braun 1900)	<i>Nycteris borealis-borealis</i>
	<i>Vespertilio</i> sp.
<i>Mesodendrium</i>	
<i>attia</i> Bhalerao 1926	<i>Nyctinomus plicatus</i>
<i>granulosum</i> (Looss 1907)	<i>Vesperugo kuhli</i>
<i>Parabascus</i>	
<i>lepidotus</i> Looss 1907	<i>Vesperugo kuhli</i>
<i>semisquamosus</i> Braun 1900	<i>Pterygistes noctula</i>
	<i>Vesperugo noctula</i>
<i>Paralecithodendrium</i>	
<i>anticum</i> (Stafford 1905)	<i>Vespertilio subtilis</i>
<i>cordiforme</i> (Braun 1900)	<i>Molossus</i> sp.
<i>cordiforme laxmii</i> (Bhalerao 1926)	<i>Nyctinomus plicatus</i>
<i>cordiforme parvuterus</i> (Bhalerao 1926)	<i>Nyctinomus plicatus</i>
<i>glandulosum</i> (Looss 1896)	<i>Megoderma frons</i>
	<i>Rhinopoma microphyllum</i>

## NORTHUP—TREMATODES FROM BATS.

	<i>Thaphozous nudiventris</i>
	<i>T. perforatus</i>
<i>glandulosum parodavi</i> (Bhalerao 1926)	<i>Nyctinomus plicatus</i>
<i>longiforme</i> (Bhalerao 1926)	<i>Nyctinomus plicatus</i>
<i>orospinosa</i> (Bhalerao 1926)	<i>Nyctinomus plicatus</i>
<i>ovimagnosum</i> (Bhalerao 1926)	<i>Nyctinomus plicatus</i>
<i>Pycnopus</i>	
<i>acetabulatus</i> Looss 1899b	<i>Vesperugo kuhli</i>
<i>heteroporum</i> (Dujardin 1845a)	<i>Pipistrellus pipistrellus</i>
<i>inversus</i> Looss 1907	<i>Vesperugo kuhli</i>
<i>macrolaimus</i> (Linstow 1894)	<i>Pipistrellus pipistrellus</i>
	<i>Vesperugo pipistrellus</i>
Family Allocreadiidae	
<i>Crepidostomum</i>	
<i>metoeces</i> (Braun 1900)	<i>Pterygistes noctula</i>
	<i>Vespertilio noctula</i>
Family Lepodermatidae	
<i>Lepoderma</i>	
<i>asperus</i> (Stossich 1904)	<i>Plecotus auritus</i>
<i>vespertilionis</i> (Müller 1784)	<i>Leuconoe daubentoni</i>
	<i>Molossus nassatus</i>
	<i>M. rufus</i>
	<i>Myotis mystacinus</i>
	<i>M. nattereri</i>
	<i>Pipistrellus pipistrellus</i>
	<i>Plecotus auritus</i>
	<i>Pterygistes noctula</i>
	<i>Rhinolophus ferrum-equinum</i>
	<i>R. hipposideros</i>
	<i>Vespertilio dascynene</i>
	<i>V. daubentoni</i>
	<i>V. emarginatus</i>
	<i>V. murinus</i>
	<i>V. mystacinus</i>
	<i>V. natterei</i>
	<i>V. subtilis</i>
	<i>Vesperugo discolor</i>
	<i>V. noctula</i>
	<i>V. serotinus</i>
Family Mesotretidae	
<i>Mesotretes</i>	
<i>peregrinus</i> (Braun 1900)	<i>Rhinolophus ferrum-equinum</i>

## Family Urotrematidae

*Urotrema**scabridum* Braun 1900*Molossus nasutus**M. rufus**Noctilio nitidis**Phyllostoma* sp.

## Systematic position uncertain

*Brachylaimus**aristotelis* (Stossich 1892)*Pipistrellus pipistrellus**Pterygistes noctula**Rhinolophus hipposideros**Vespertilio dasycneme**V. daubentoni**V. emarginatus**V. murinus**V. mystacinus**Monostoma**noctula* Cobbold 1860*Pterygistes noctula**Vespertilio noctula**Vesperugo noctula*

## List of Bat Termatodes Arranged According to Hosts.

## MICROCHIROPTERA.

## Family Rhinolophidae

*Rhinolophus* Geoffroy 1803*ferrum-equinum* (Schreber 1775)*Lepoderma**vespertilionis* (Müller 1784)*Mesotretes**peregrinus* (Braun 1900)*Acanthatrium**sphaerula* (Looss 1896)*Anchitrema**sanguineum* (Sonsino 1894)*Brachylaimus**aristotelis* (Stossich 1892)*Lecithodendrium**chilostomum* (Mehlis 1831)*lagna* (Brandes 1888)*pyramidum* (Looss 1896)*Lepoderma**vespertilionis* (Müller 1784)*hipposideros* (Bechstein 1801)

## NORTHUP—TREMATODES FROM BATS.

## Family Nycteridae

*Megaderma* Geoffroy 1810*frons* Geoffroy 1810*Acanthatrium**sphaerula* (Looss 1896)*Anchitrema**sanguineum* (Sonsino 1894)*Paralecithodendrium**glandulosum* (Looss 1896)*Nycteris* Desmarest 1803*borealis-borealis* (Müller 1776)*Acanthatrium**nycteridis* Faust 1919*Limatulum**tubipora* (Braun 1900)

## Family Vespertilionidae

*Leuconoe* Boie 1825*daubentoni* (Leisler 1819)*Lecithodendrium**chilostomum* (Mehlis 1831)*lagna* (Brandes 1888)*Lepoderma**vespertilionis* (Müller 1784)*Myotis* Kaup 1829.*mystacinus* (Leisler 1819).*Lecithodendrium.**chilostomum* (Mehlis 1831).*lagna* (Brandes 1888).*Lepoderma.**vespertilionis* (Müller 1784).*nattereri* (Kuhl 1819).*Lecithodendrium.**chilostomum* (Mehlis 1831).*Lepoderma.**vespertilionis* (Müller 1784).*Pipistrellus* Kaup 1829.*pipistrellus* (Schreber 1775).*Brachylaimus**aristotelis* (Stossich 1892)*Lecithodendrium**chilostomum* (Mehlis 1831)*lagna* (Brandes 1888)*Lepoderma**vespertilionis* (Müller 1784)*Plecotus* Geoffroy 1812.*auritus* (Linnaeus 1776)*Lecithodendrium**chilostomum* (Mehlis 1831)*lagna* (Brandes 1888)

- Lepoderma*  
*asperum* (Stossich 1904)  
*vespertilionis* (Müller 1784)
- Pterygistes*  
*leisleri* (Kuhl 1819).
- Lecithodendrium*  
*chilostomum* (Mehlis 1831)
- noctula* (Schreber 1775).
- Brachylaimus*  
*aristotelis* (Stossich 1892)
- Crepidostomum*  
*metoecus* (Braun 1900)
- Lecithodendrium*  
*chilostomum* (Mehlis 1831)
- Lepoderma*  
*vespertilionis* (Müller 1784)
- Monostoma*  
*noctula* Cobbold 1860
- Parabascus*  
*semisquamatus* (Braun 1900)
- Vespertilio* Keys and Blas 1839  
 sp.
- Limatulum*  
*tubipora* (Braun 1900)
- dascyneme* (Boie 1825)
- Brochylaimus*  
*aristotelis* (Stossich 1892)
- Lecithodendrium*  
*lagna* (Brandes 1888)
- Lepoderma*  
*vespertilionis* (Müller 1784)
- daubentonii* (Leisler 1819)
- Brachylaimus*  
*aristotelis* (Stossich 1892)
- Lecithodendrium*  
*chilostomum* (Mehlis 1831)  
*lagna* (Brandes 1888)
- Lepoderma*  
*vespertilionis* (Müller 1784)
- emarginatus* (Geoffroy 1806)
- Brachylaimus*  
*aristotelis* (Stossich 1892)

## NORTHUP—TREMATODES FROM BATS.

	<i>Lecithodendrium</i> <i>lagna</i> (Brandes 1888)
	<i>Lepoderma</i> <i>vespertilionis</i> (Müller 1784)
<i>gryphus</i> (Cuvier 1832)	<i>Lecithodendrium</i> <i>chilostomum</i> (Mehlis 1831)
<i>murinus</i> (Schreber 1775)	<i>Brachylaimus</i> <i>aristotelis</i> (Stossich 1892)
	<i>Lecithodendrium</i> <i>chilostomum</i> (Mehlis 1831)
	<i>lagna</i> (Brandes 1888)
	<i>Lepoderma</i> <i>vespertilionis</i> (Müller 1784)
<i>mystacinus</i> (Leisler 1819)	<i>Brachylaimus</i> <i>aristotelis</i> (Stossich 1892)
	<i>Lecithodendrium</i> <i>chilostomum</i> (Mehlis 1831)
	<i>lagna</i> (Brandes 1888)
	<i>Lepoderma</i> <i>vespertilionis</i> (Müller 1784)
<i>natteri</i> (Kuhl 1819)	<i>Lecithodendrium</i> <i>chilostomum</i> (Mehlis 1831)
	<i>Lepoderma</i> <i>vespertilionis</i> (Müller 1784)
<i>nitidus</i> Allen 1862	<i>Urotrema</i> <i>scabridum</i> Braun 1900
<i>noctula</i> (Schreber 1775)	<i>Crepidostomum</i> <i>metoeces</i> (Braun 1900)
	<i>Lecithodendrium</i> <i>chilostomum</i> (Mehlis 1831)
	<i>Monostoma</i> <i>noctula</i> Cobbold 1860
<i>*subtilis</i>	<i>Lecithodendrium</i> <i>posticum</i> Stafford 1905
	<i>Lepoderma</i> <i>vespertilionis</i> (Müller 1784)

With the exception of species indicated (\*) above list has been corrected according to Trouessart (1898-9).



- Vesperugo* Keys and Blas 1839  
*discolor* (Natterer 1819)
- kuhli* (Natterer 1817)
- leisleri* (Kuhl 1819)
- \**nanthusi*
- noctula* (Schreber 1775)
- serotinus* (Schreber 1775)
- Paralecithodendrium*  
*anticum* (Stafford 1905)
- Lecithodendrium*  
*chilostomum* (Mehlis 1831)
- Lepoderma*  
*vespertilionis* (Müller 1784)
- Lecithodendrium*  
*lagena* (Brandes 1888)  
*urna* Looss 1907
- Mesodendrium*  
*granulosum* (Looss 1907)
- Parabascus*  
*lepidotus* Looss 1907
- Pycnopus*  
*acetabulatus* (Looss 1899b)  
*inversus* Looss 1907
- Lecithodendrium*  
*chilostomum* (Mehlis 1831)
- Lecithodendrium*  
*lagena* (Brandes 1888)
- Crepodostomum*  
*metoeces* (Braun 1900)
- Monostomum*  
*noctula* Cobbold 1860
- Lecithodendrium*  
*chilostomum* (Mehlis 1831)
- Lepoderma*  
*vespertilionis* (Müller 1784)
- Parabascus*  
*semisquamosum* Braun 1900
- Lecithodendrium*  
*chilostomum* (Mehlis 1831)  
*lagena* (Brandes 1888)
- Lepoderma*  
*vespertilionis* (Müller 1784)

## NORTHUP—TREMATODES FROM BATS.

## Family Emballonuridae

*Molossus* Geoffroy 1812*nasatus* Spix 1823*Lepoderma*  
*vespertilionis* (Müller 1784)*Urotrema*  
*scabridum* Braun 1900*rufus* Geoffroy 1805*Lepoderma*  
*vespertilionis* (Müller 1784)*Urotrema*  
*scabridum* Braun 1900

sp.

*Limatulum*  
*limatula* (Braun 1900)*Paralecithodendrium*  
*cordiforme* (Braun 1900)*Noctilio* Linnaeus 1776\**macropus**Urotrema*  
*scabridum* Braun 1900*Nyctinomus* Geoffroy 1812*plicatus* (Buchanan-Hamilton  
1800)*Acanthatrium*  
*nycteridis plicati* Bhalerao 1926*Mesodendrium*  
*attia* Bhalerao 1926*Paralecithodendrium*  
*cordiforme laxmii* (Bhalerao 1926)„ *parvuetrus* (Bhalerao 1926)*glandulosum poradavi* (Bhalerao  
1926)*ovimagnosum* (Bhalerao 1926)*orospinosum* (Bhalerao 1926)*Rhinopoma* Geoffroy 1812*microphyllum* Geoffroy 1812*Paralecithodendrium*  
*glundulosum* (Looss 1896)*Thaphozous* Geoffroy 1812*nudiventris* Cretzschmar 1926*Anchitrema*  
*sanguineum* (Looss 1900)

*Paralecithodendrium*  
*glandulosum* (Looss 1896)

*perforatus* Geoffroy 1912

*Paralecithodendrium*  
*glandulosum* (Looss 1896)

Family Phyllostomidae

*Phyllostoma*  
sp.

*Urotrema*  
*scabridum* (Braun 1900)

Key to species of Trematoda from bats.

1. A single (oral) sucker present .... *Monostoma noctula*  
Two suckers (oral and ventral) present .... (2)
2. Genital pore near posterior end of body *Urotrema scabridum*  
Genital pore near ventral sucker .... (3)
3. Testes C-shaped, one posterior to the  
other .... *Mosotretes peregrinus*  
Testes not C-shaped .... (4)
4. Uterine coils extending anterior to ante-  
rior testes .... (24)  
Uterine coils not extending anterior to  
anterior testes ... (50)
5. Vitellaria two lateral bands extending  
internally to intestinal caeca, reaching  
posterior end of body .... *Lepoderma* (6)  
Vitellaria two lateral bands, external to  
intestinal caeca, in center of body,  
ovary posterior to testes .... *Dicrocoelium hospes*  
Vitellaria two lateral bands, not extend-  
ing posteriorly to center of the body .... (p. 84)  
..... (7)
6. *L. asperus*  
*L. vespertilionis*
7. Cirrus-sac present .... (8)  
Cirrus-sac absent .... (11)
8. Testes in the same transvers line, vitel-  
line glands extending lateral to ventral  
sucker, cirrus bent completely upon itself *Limatula* (9)

## NORTHUP—TREMATODES FROM BATS.

- Testes one obliquely posterior to the other, vitelline glands completely anterior to the ventral sucker, cirrus bent upon itself to form a right angle .... *Parabascus* (10)
9. Vitelline follicles two small compact groups anterior and lateral to ventral sucker ... .. *L. limatula*
- Vitelline follicles two elongated bands anterior, lateral and posterior to the ventral sucker .... *L. tubipora*
- 10 Body covered with spines almost to posterior, end, testes slightly oblique .... *P. lepidotus*
- Only anterior half of body covered with spines, testes very oblique .... *P. semisquamatus*
11. Testes surrounded by uterus .... *Pycnopus* (12)
- Testes anterior to uterus .... (13)
12. Testes oblique with plane of testes and plane of body at right angles to one another, vitellaria lateral and posterior to ventral sucker ... .. *P. inversus*
- Testes oblique with plane of testes and body parallel to each other, vitellaria posterior to ventral sucker .... *P. macrolaimus*
- Testes symmetrical, planes of testes and body parallel to each other, vitellaria lateral to ventral sucker ... .. *P. acetabulatus*
- Testes symmetrical, planes of testes and body parallel to each other, vitellaria posterior to ventral sucker ... *P. heteroporum* (p. 82)
13. Genital atrium lined with spines, testes lateral to genital pore ... .. *Acanthatrium* (14)
- Genital atrium not lined with spines, testes posterior to genital pore ... (15)
14. Genital pore on right side of ventral sucker ... .. *A. sphaerula*
- Genital pore anterior to the center of ventral sucker ... .. *A. nycteridis*

15. Vitelline glands posterior to the testes .... (16)  
 Vitelline glands anterior to the testes ... (18)
- 16 Ovary anterior to ventral sucker ... *Lecithodendrium anitcum*  
 Ovary posterior to ventral sucker ... (17)
17. Vitelline glands two compact groups touching testes ... *Mesodendrium granulosum*  
 Vitelline glands two elongated lateral bands not touching testes .... *M. attia*  
 Vitelline glands two branched groups, nearly or definitely touching testes .... *Lecithodendrium lagena*
- 18 Oral sucker conspicuously larger than ventral (?1/4 length of body) testes lateral two ventral sucker, vitelline follicles few at side of neck .... *Lecithodendrium chilostomum*  
 Oral sucker not conspicuously larger than ventral sucker .... (19)
- 19 Ovary branched, anterior to ventral sucker (20)  
 Ovary entire anterior to ventral sucker (21)  
 Ovary entire, posterior to ventral sucker .. (23)
- 20 Testes anterior to ventral sucker .... *Paralecithodendrium glandulosum*  
 Testes lateral to ventral sucker, eggs 15-20 $\mu$  x 9-13 $\mu$  .... *P. ovimagnosum* (p. 83)  
 Testes ? eggs 22-32 $\mu$  x 11-15 $\mu$  .... *P. cordiforme*
- 21 Vitelline follicles a continuous transverse band crossing oral sucker .... *P. orospinosum*  
 Vitelline follicles two separate groups ... (22)
22. Eggs 29-35 $\mu$  x 15-16 $\mu$  .... *P. longiforme* (p. 83.)  
 Eggs 21 $\mu$  x 12 $\mu$  .. *P. anticum*
23. Ovary posterior to ventral sucker, testes lateral or slightly lateral to ventral sucker *Lecithodendrium pyramidum* (p. 83)  
 Ovary lateral to ventral sucker, testes lateral to ventral sucker ... *L. posticum*  
 Ovary and testes posterior to ventral sucker *L. urna*
24. Testes and uterus external to caeca ... *Anchitrema sanguineum* (p. 84)

## NORTHUP—TREMATODES FROM BATS.

- Testes internal to caeca ... (25)
25. Vitelline glands extending to and uniting  
at posterior end of body ... *Crepidostomum*  
*metoeces*
- Vitelline glands in two distinct groups, not  
extending posterior to center of body ... *Pycnoporos* (12)
- From the above key *Brachylaimus aristotelis* (Stossich 1892) is  
omitted for lack of an adequate diagnosis.

## Bibliography.

- Bhalerao, G. D. (1926) The intestinal parasites of the bat (*Nyctonomus plicatus*) with a list of the Trematodes hitherto recorded from Burma. *Jour Burma. Res. Soc.* XV. 181-195.
- Braun M. (1900b.) Trematoden der Chiroptera.  
Ann. K. K. Naturh. Hofmuseum. XV, 217-236.
- Dujardin, M. F. (1845) Histoire Naturelle des Helminthes ou vers intestinaux. Paris
- Faust, E. C. (1919) A new Trematode, *Acanthatrium nycteridis* from the little brown bat. *Trans. Amer. Micros. Soc.* XXXVIII, 209-215.
- Linstow, V. (1893-1894) Helminthologische Studien. Jen. Zeit. XXVIII, 328-341.
- Looss, A. (1896) Recherches sur la faune parasitaire de l'Égypte.  
*Mem. Instit Egyptien* III, 1-252.
- (1899) Weitere Beiträge zur Kenntniss der Trematoden.  
*Zool. Jahrb. Abt. f. syst.* XII, 521-784.
- (1907) Notizen zur Helminthologie Aegyptens VII. Ueber einige neue Trematoden der ägyptischen Fauna.  
*Centralbl. Bakt.* XLIII, 604-613.
- Nicoll, W. (1923) Trematodes of British Mammals.  
*Parasit.* 15, 236-252.
- Odhner, T. (1910c) Nordostafrikanisch Trematoden. Results of the Swedish Zoological Expedition to Egypt and the White Nile. 1900 Part LV. 1911 No. 23A.
- Stafford, J. (1905) Trematodes from Canadian Vertebrates.  
*Zool. Anz.* XXVIII, 681-694.
- Trouessart, E. L. (1898-1904) Catalogus Mammalium tam viventium quam fossilium. Berlin.

# LIST OF MAMMALS OBTAINED IN THE MYINGYAN DISTRICT

BY

G. C. SHORTRIDGE.

In 1913 Mr. G. C. Shortridge, who was touring in Burma on behalf of the Mammal Survey, provided Mr. J. S. Furnival with a list of the mammals that he had collected in the Myingyan District. It should be noted that in some cases the names were only provisional as the collection had not then been worked on in England. It was intended for publication in the Journal of the Bombay Natural History Society, but as there are many in Burma who do not see this journal this list is published in the hope that a larger number will realise our obligation to that society, an obligation which must continue to be heavy until we have some local society working on similar lines.

monkey, Assam red	<i>Simia assamensis</i>	နောင်*	Plentiful on Mount Popa and on the low hills to the south.
Phayre's leaf	<i>Presbytis phayrei</i>	နောင်မျှ	Fairly plentiful in thick jungle on the slopes of Mount Popa.
tiger	<i>Felis tigris</i>	ကျား	Apparently very rare in Myingyan District.
panther	<i>Felis pardus</i>	ကျားသစ်	Apparently not plentiful but well known to villagers around Popa.
cat, panther	<i>F. bengalensis</i>	သစ်ကြောင်	Not uncommon round Popamyo.
" , jungle	<i>F. affinis</i>	ကြောင်ပေါး	Plentiful, often living in the roofs of houses, probably a useful animal on account of the number of rats it destroys, partly frugivorous.
" , Burmese today	<i>Paradoxurus hermaphroditus</i>	ကြောင်မိရဲ	
civet, lesser	<i>Viverricula malaccensis</i>	ကြောင်မြင်း	Said to occur on Mount Popa, identified from its native name.
" , large	<i>Viverra</i> sp.	ကြောင်နို့သ	Known to villagers on Mount Popa but said to be rare.
mongoose	<i>Herpestes</i> sp.	မို့ဝါ	Fairly plentiful.
jackal	<i>Canis aureus</i>	ခွေးသား	Occurring around Mount Popa.
dog, wild	<i>Cuon rutilans</i>	ခွေး	Apparently fairly plentiful around Mount Popa, though owing to nocturnal burrowing habits seldom seen.
badger, ferret	<i>Helictis personata</i>	ကြောင်မုကုန်	A large apparently carnivorous animal that I was unable to identify, said to occur on bare rocky hills about 30 miles to the south of that mountain.
?	?	ဝံလေး	This is probably the otter that occurs on the Irrawaddy near Pagan.
otter, smooth	<i>Lutra macrodus</i>		

For the transliteration of the Burmese names the Editor is indebted to Mr. M. R. HANDA, and to Professor PE MAUNG TIN.



shrew, Pegu tree	<i>Tupaia peguana</i>	ရှည်ချွေ.	Plentiful, especially round villages when it may easily be mistaken for the common squirrel of the district.
shrews	<i>Pachyura</i> spp.	မြွတ်ကတီး	A single specimen (unidentified) obtained on Mount Popa.
" , mice		မြွတ်စုတ်	Apparently rare in this district and specimens are much wanted for identification.
bat, fruit	<i>Rousettus leschenaulti</i>	လင်းဆွဲ	Probably several species of this genus occur.
" , leaf-nosed or horse-shoe	<i>Cynopterus sphinx</i> <i>Hipposideros larvatus</i> <i>H. fulvus</i>		
" , pipistrelle	<i>Rhinolophus coelophyllus</i> <i>Pipistrellus</i> sp.		
" , yellow	<i>Scotophilus kuhli</i>	လင်းဒို	
" , Wroughton's	<i>S. wroughtoni</i>		Doubtfully recorded from Mount Popa where both of the smaller species were obtained.
" , sheath-tailed	<i>Taphozous kachhensis</i> <i>T. longimanus</i> <i>T. melanopogon</i>		
squirrel, small flying	<i>Sciuropterus pearsoni</i>	ရှည်ပုံ	
" , large "	<i>Pteropus</i> sp.	နွား	
" , giant	<i>Ratufa</i> sp.	ရှင်နီ	Occurring on the higher slopes of Mount Popa.
" , bay	<i>Sciurus findlaysoni</i>	ရှည်နီကလေး	The common squirrel of the district and apparently the only one not confined to the country immediately round Mount Popa.
" , Irrawaddy	<i>S. pygeryturus</i>	ရှည်ဆွဲ၊ ရှည်မြိ	

squirrel, Berdmore's ground	<i>Menetes berdmorei</i>	ရှင်မော့ဘိုး	Plentiful on Mount Popa, a ground squirrel which seldom, if ever, ascends trees.
bandicoot	<i>Bandicota</i> sp.	မိမိ	Very plentiful around towns and villages especially along the banks of the Irrawaddy and on the slopes of Mount Popa.
rat, Indian house , Burmese pigmy	<i>Epinys fulvescens</i> <i>E. concolor</i>	မိုက်	Closely allied to the black rat of Europe. The young of this species may easily be mistaken for the Indian house mouse.
mouse, Indian house , field	<i>Mus manei</i> <i>M. nitidulus</i>		Closely allied to the English house mouse.
rat, large red field , tree	<i>Leggada</i> sp. <i>Vandeleuria</i> sp. ?	မိုက်	A red tree mouse.
porcupine, Bengal deer, barking	<i>Rhisonmys badius</i> <i>Hystrix bengalensis</i> <i>Muntiacus vaginalis</i>	မိုက် မိုက် မိုက်	From Mount Popa, not yet identified. Very plentiful, a burrowing rodent belonging to the family of bamboo-rats plentiful on Mount Popa.
thamin deer, hog	<i>Cervus eldi</i> <i>C. porcinus</i>	သမင် မိုက်	Plentiful wherever there is sufficient cover.
serow	<i>Capricornis</i> sp.	သမင်	Mentioned in former gazetteers. Not occurring on or near Mount Popa, but possibly in the extreme south of the district.
pig, wild pangolin, Chinese	<i>Sus cristatus</i> <i>Manis aurita</i>	သမင် သမင်	Formerly occurring on Mount Popa but now apparently extinct.
			Not uncommon on Mount Popa.

# A SHORT ACCOUNT OF THE FILAMENTOUS GREEN ALGAE FROM VARIOUS PLACES IN BURMA

BY

M. R. HANDA, M.Sc.

(University of Rangoon)

It has already been mentioned (Handa 1927) that Burma presents a very wide field for phycological research and in abundance and wealth of material, and therefore in the opportunities and resources of algal investigation, is the equal of any locality in the world. Climatic circumstances, such as a heavy rainfall distributed over a period of six months and the general absence of any extremes of heat or cold, have called forth an almost unrivalled development of algal life in this country.

With the aid of annual grants from the University of Rangoon, to which body the writer is gratefully indebted, specimens have been collected from various localities in Burma. It may be not irrelevant to add that, as a result of these tours the writer has now at his disposal a comprehensive collection of samples, mostly fresh-water, with a few marine. The present paper embodies an account of a few of the filamentous fresh-water green algae. It has been considered advisable to postpone the description of the remainder until sufficient time and facilities be available for their detailed investigation.

## Systematic description of the species identified.

### ISOKONTAE.

Group 1. **Chlorococcales.**

Series **Zoosporinae.**

Family **Hydrodictyaceae.**

Genus **Hydrodictyon** Roth.

1. *Hydrodictyon reticulatum* (L.) Lagerheim; Pascher 1915, p. 107, fig. 68; West and Fritsch 1927, p. 117, fig 30; Cooke 1890, p. 208, pl. 3, fig. 22; Hassall 1857, p. 225, pl. 58; Tiffany 1927, p. 76, pl. 13, fig 143; Carter 1926, p. 278.

Plate I, Figs. 1—2.

Thallus in shape of a hollow net, composed of long cylindrical coenocytes, five or six of which unite to form meshes of variable size; three coenocytes abut at each angle. Length of net could not be deter-

## HANDA—FILAMENTOUS GREEN ALGAE FROM BURMA.

mined as the coenobia at hand were either young or in case of adult plants, were procured only in fragments. Adult coenocytes 4-5mm. long, 240—260 $\mu$  thick.

*Habit.*—Free-floating in stagnant ponds usually becoming entangled amongst other commoner filamentous algae such as *Oedogonium*, *Spirogyra*, *Zygnema* etc., Taunggyi, October 14, 1927. Also collected from Maymyo, October 19, 1928, by Mr. B. P. Pal.

Group 2 *Ulotrichales*.Series *Eu-Ulotrichales*.Family *Ulvaceae*.Genus *Enteromorpha* Link.

2. *Enteromorpha intestinalis* (L.) Link; Pascher 1914, p. 27, fig. 21; West and Fritsch 1927, p. 162, fig. 59L; Cooke 1890, p. 240; Hassall 1857, p. 303, pl. 77, fig. 2.

Plate I, Fig. 3.

Thallus simple or a little branched, a few branches arising from near the base; elongated, tubular and intestiniform, variable in size and shape, sometimes much crisped and contorted, yellowish-green. Cells 10—16 $\mu$  in diameter, 4-5-6 angled, in no regular order, arranged in a single layer.

*Habit.*—Pond near Judson College, Rangoon, 1927.

Group 3. *Oedogoniales*.Family *Oedogoniaceae*.Genus *Oedogonium* Link.

3. *Oedogonium Borisianum* (Le Cl.) Wittrock; Pascher 1914, p. 178, fig. 243; West and Fritsch 1927, p. 222; Tiffany 1926, p. 103, pl. 8, fig. 87; Cooke 1890, p. 254; *Vesiculifera Borisii* Hassall 1857, p. 201, pl. 52, fig. 7.

Plate I, Fig. 4.

Dioecious, nannandrous, gynandrosporous or idioandrosporous; oogonium single, oboviform or quadrangular-ellipsoid, pore superior; oospore ovoid, not filling oogonium, spore wall smooth; androsporangia 1-6 celled, usually in the upper part of filament; basal cell elongate; terminal cell, often an oogonium, obtuse; dwarf males somewhat curved, on suffultory cell; suffultory cell much inflated; antheridia 1-2 celled; vegetative cells 17-28 $\mu$  thick, 45-140 $\mu$  long; suffultory cells 40-46 $\mu$  thick, 66-72 $\mu$  long; oogonia 50 $\mu$  thick, 63 $\mu$  high; oospores 44 $\mu$  thick, 58 $\mu$  high;

androsporangia  $16-18\mu$  thick,  $16-23\mu$  long; dwarf male stipe  $16-18\mu$  thick,  $50-61\mu$  long; antheridial cells  $7-10\mu$  thick,  $11-15\mu$  long.

*Habit.*—Pond, Taunggyi, October 14, 1927.

The swollen character of the suffultory cells in the present species, together with the curved nature of the dwarf males are characters remarkably distinctive of the species, easily separating it from any others of the same genus.

4. *Oedogonium rufescens* Wittrock sec. Hirn; Pascher 1914, p. 192, fig. 270.

Plate I, Figs. 5-6.

Dioecious, macrandrous; oogonium single sub-globose, with a median pore; oospore roundish, nearly filling oogonium, with smooth membrane; basal cell sub-hemispherical; vegetative cells  $6-9\mu$  thick, 4-6 times as long; oogonia  $24-28\mu$  thick,  $22-24\mu$  high; oospores  $20-22\mu$  in diameter.

Male plants not observed.

*Habit.* Pond, epiphytic on species of a larger *Oedogonium*, Taunggyi, October 14th, 1927.

*Oedogonium* as a genus is quite common, occurring as epiphytes on species of *Pithophora*, *Cladophora*, *Chara*, *Nitella* and larger *Oedogoniums* or on the stems and leaves of submerged higher plants. Not infrequently they form huge floating masses on the surface of ponds, pools, etc. Most of them were sterile and could not be identified.

#### Genus *Bulbochaete* Agardh.

5. *Bulbochaete dolliformis* Borge; Tiffany 1928, p. 145, figs 9-40.

Plate I, Figs. 7-8.

Dioecious, nannandrous; oogonia ellipsoid, erect, below terminal setae; suffultory cell without division; oospores ellipsoid, filling or not filling oogonia, wall smooth; dwarf males on vegetative cells, sometimes on suffultory cells, antheridia exterior, 2-celled; vegetative cells  $12-16\mu$  thick,  $12-18\mu$  long; oogonia  $23-25\mu$  thick,  $28-33\mu$  high; oospores  $22-23\mu$  thick,  $28-32\mu$  high; dwarf male stipe  $10-12\mu$  thick,  $10-13\mu$  high; antheridia  $7-8\mu$  thick,  $7-8\mu$  high.

*Habit.* Epiphytic on filaments of *Spirogyra*, Maymyo, October 10, 1928, collected by Mr. B. P. Pal.

In form and dimensions of cells and in the presence of suffultory cells without division, this species agrees very closely with *Bulbochaete pygmaea* Pringsheim with the difference that in the latter, the oospore wall is longitudinally ribbed while in the former, it is smooth.

It is extremely interesting that this plant, which has only been reported from Argentina, should be next recorded from Burma.

The genus *Bulbochaete* does not appear with any proportionate frequency in the records : in fact it was quite rare as an important constituent of the flora of any given spot and was quite as rarely in fruit.

#### Group 4. Conjugatae.

##### Series Euconjugatae.

##### Family Zygnemaceae.

##### Genus Spirogyra Lirk.

6. *Spirogyra tenuissima* (Hass.) Kutz; Pascher 1913, p. 16, fig. 1; West and Fritsch 1927, p. 246, fig. 98C; Tiffany 1926, p. 83; Cooke 1890, p. 228; *Zygnema tenuissimum* Hassall 1857, p. 152, pl. 32, figs. 9-10.

Plate I, Fig. 9.

Vegetative cells  $12\mu$  thick, 5-10 times as long, with replicate cross-walls; single chloroplast with 3-6 spirals.

*Habit.* Pond, together with *Spirogyra inflata* (Vauch.) Rab; Kyaikmaraw, October 25, 1928.

Although the filaments were all purely vegetative, yet there can be no doubt whatsoever as to their identity. The plant is very nearly related to *Spirogyra inflata* from which it is mainly distinguished by its smaller size.

7. *Spirogyra inflata* (Vauch.) Rab; Pascher 1913, p. 17, fig. 3; West and Fritsch 1927, p. 235, fig. 94D; Carter 1926, p. 282; *Zygnema inflatum* Hassall 1857, p. 151, pl. 32, figs. 6-8.

Plate I, Figs. 10-11.

Vegetative cells  $19-20\mu$  thick, 4-10 times as long, with replicate cross-walls; one chloroplast with 3-8 spirals. Fruiting cells considerably swollen in the middle,  $36-42\mu$  thick, in length a little shorter than the vegetative cells. Zygote elliptic,  $25-32\mu$  thick,  $1\frac{1}{2}-2$  times as long, with smooth membrane.

*Habit.* Pond, associated with species of *Zygnema* and *Mougeotia*, Moulmein and Kyaikmaraw, October 25, 1928.

8. *Spirogyra rivularis* (Hass.) Rab; Pascher 1913, p. 27 : *Zygnema rivulare* Hassall 1857, p. 144, pl. 27, figs. 1-2.

Vegetative cells 33-44 $\mu$  thick, 3-9 times as long, with non-replicate cross-walls; 2-3 chloroplasts with 2 $\frac{1}{2}$ -3 $\frac{1}{2}$  spirals. Fruiting cells not swollen. Zygote ovoid-ellipsoid, 39-47 $\mu$  thick, 61-78 $\mu$  long.

*Habit.* Ponds, Moulmein, October 25, 1928.

Conjugation between three to five filaments and the presence of two zygotes in the female cell were occasionally observed in this form.

9. *Spirogyra neglecta* (Hass.) Kutz; Pascher 1913, p. 29, fig. 36; West and West 1902, p. 133; West and West 1907, p. 187; Carter 1926, p. 282; *Zygnema neglectum* Hassall 1857, p. 142, pl. 23, figs. 1-2.

Plate II, Figs. 12-14.

Vegetative cells 58-67 $\mu$  thick, 2-4 times long, with simple cross-walls; 3 chloroplasts with 1-2 $\frac{1}{2}$  spirals. Fruiting cells slightly inflated, 72-77 $\mu$  thick, 1-2 times as long. Zygote oval with broad round ends, 52-56 $\mu$  thick, about 1 $\frac{1}{2}$  times as long.

*Habit.* Pond, Taunggyi, October 15, 1927.

10. *Spirogyra nitida* (Dillw.) Link; Pascher 1913, p. 29, fig. 37; West 1907, p. 106; Tiffany 1926, p. 83, pl. 16, fig. 171; Martens 1871, p. 464; Zeller 1873, p. 185; Cooke 1890, p. 224; Theobald 1883, p. 21; *Zygnema nitidum* Hassall 1857, p. 141, pl. 22, figs. 1-2.

Plate II, Fig. 15.

Vegetative cells 70-110 $\mu$  thick, 1-3 times as long, with simple cross-walls; 3-5 chloroplasts with  $\frac{1}{2}$ -1 $\frac{1}{2}$  spirals. Fruiting cells not swollen. Zygote ellipsoidal, with pointed ends, 65-84 $\mu$  thick, 1 $\frac{1}{2}$ -2 times as long, membrane brown and smooth.

*Habit.* Road-side pond between Heho and Taunggyi, entangled amongst *Chara zeylanica* Willd; October 8, 1927.

I am indebted for the identification of *Chara zeylanica* to Mr. B. P. Pal of this department, who is investigating the Burmese Charophytes.

The preceding species is distinguished from the present in the lesser dimensions of the filaments, the more obtusely oval zygotes, generally in the presence of three chloroplasts and in the slight inflation of cells in which the zygotes are lodged.

11. *Spirogyra crassa* Kutz; Pascher 1913, p. 31, fig. 42; Tiffany 1926, p. 82, pl. 16, fig. 175; Zeller 1873, p. 185; Cooke 1890, p. 224; Theobald 1883, p. 21.

## Plate II, Figs. 16-17.

Vegetative cells  $111-145\mu$  thick, 1-2 times as long, with simple cross-walls; 8-12 chloroplasts with  $\frac{1}{2}$ -1 spiral. Fruiting cells not swollen. Zygote brown, broadly oval and flattened,  $78-100\mu$  thick,  $139-155\mu$  long.

*Habit.* Pond, Taunggyi, October 10, 1927.

Various other species of *Spirogyra* (both with replicate and non-replicate septae) and *Zygnema* were encountered in several collections but as they were all sterile, the species could not be determined.

Genus *Zygnema* Agardh.

12. *Zygnema pectinatum* (Vauch.) Ag. var. *conspicuum* (Hass.) Kirch; Pascher 1913, p. 33.

## Plate II, Figs. 18-19.

Vegetative cells  $23-28\mu$  thick,  $1\frac{1}{2}$ - $3\frac{1}{2}$  times as long. Zygote in conjugation canal, broadly elliptic, middle membrane thick and scorbiculate,  $27-36\mu$  thick.

*Habit.* Road-side stream, Taunggyi, October 10, 1927.

The dimensions of this form are slightly larger than in the type variety.

## Group 5. Siphonales.

## Family Vaucheriaceae.

Genus *Dichotomosiphon* Ernst.

13. *Dichotomosiphon tuberosus* Ernst; Pascher 1921, p. 97, figs. 93-94; Tiffany 1926, p. 77, pl. 12, fig. 137.

## Plate II, Figs. 20-21.

Thallus  $60-110\mu$  thick; reproductive organs at the ends of ultimate branches; oogonium globular,  $315-350\mu$  in diameter; oospore globular,  $280-315\mu$  in diameter, dark-green; antheridium cylindrical,  $30-55\mu$  thick,  $140-210\mu$  long; akinetes irregularly club-shaped,  $80\mu$  thick,  $350-420\mu$  long, at the ends of special branches.

*Habit.* Attached in mud at the margin of water reservoir, Taunggyi, October 10, 1927. Also on damp sandy soil in the neighbourhood of



stream, but without sexual organs, Taunggyi, October 13, 1927. In a stream from Maymyo, mixed with *Nitella batrachosperma* Braun, the latter being of a less robust build than the alga, October 1928, collected by Mr. B. P. Pal.

The outstanding characteristics of this plant are the dichotomous mode of branching, the constrictions of the coenocytes and the club-shaped tubers at the ends of the branches : these serving to distinguish it from the allied member *Vaucheria*.

Curiously enough, in the flora of the several localities personally examined since 1926, the genus *Vaucheria* was altogether lacking, although a diligent search was made in the various habitats normal for the plant, during different periods of the year. It is much to be hoped that the plant may be collected at no distant date.

My thanks are due to Mr. B. P. Pal for his kindly having placed some of the material at my disposal for investigation.

### Bibliography.

- Carter, Nellie (1926) : Freshwater Algae from India. *Rec. Bot. Sur. India*, 1X, 263-302.
- Cooke, M. C. (1890) : Introduction to Fresh-water Algae. London.
- Handa, M. R. (1924) : A Contribution to our knowledge of the Green Algae of Rangoon. *Jour. Bur. Res. Soc.*; XIII 259-269.
- Hassall, A. H. (1857) : A history of the British Fresh-water Algae. Vol. 2. London.
- Martens, G. (1871) : List of Algae collected by Mr. S. Kurz, in Burma and adjacent islands. *Jour. Asia. Soc. Bengal*, LX, 461-469.
- Pascher, A. (1913) : Die Susswasserflora Deutschlands, Oesterreichs und der Schweiz.  
H. 9 : Zygnemales. Jena  
——— (1914) : H. 6 : Chlorophyceae 3. Jena.  
——— (1921) : H. 7 : Chlorophyceae 7. Jena.
- Theobald, W. (1883) : Burma, its people and productions. Vol. 2, Botany, 16-30. Hertford.
- Tiffany, L. H. (1926) : The filamentous algae of North-western Iowa with special reference to the Oedogoniaceae.  
*Trans. Amer. Micr. Soc.*; XLV, 69-132.  
——— (1928) : The Algal Genus *Bulbochaete*.  
*Trans. Amer. Micr. Soc.*; XLVII, 121-177.
- West, W. and West, G. S. (1902) : A Contribution to the Fresh-water Algae of Ceylon.  
*Trans. Linn. Soc. London*, VI, 123-215.

PLATE I.

FIG. 3



110  $\mu$

FIG. 4

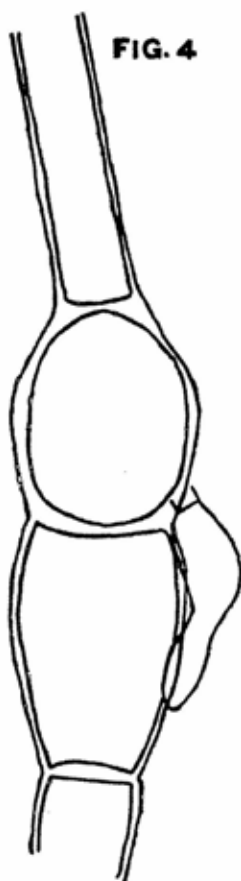


FIG. 5



FIG. 6

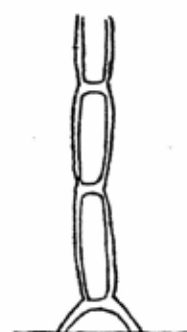


FIG. 7



110  $\mu$

55  $\mu$

FIG. 9



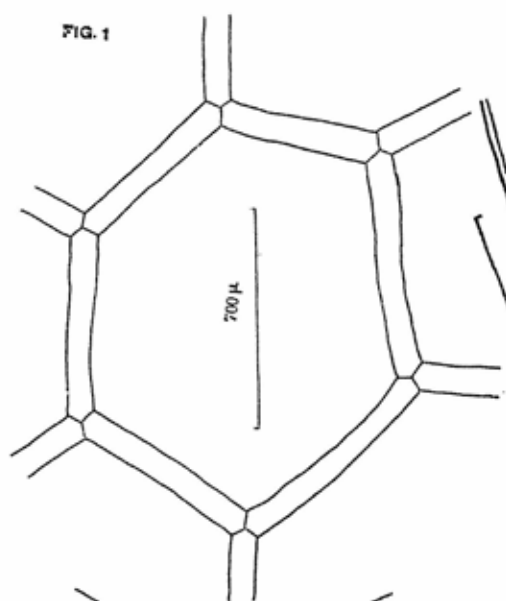
110  $\mu$

FIG. 8



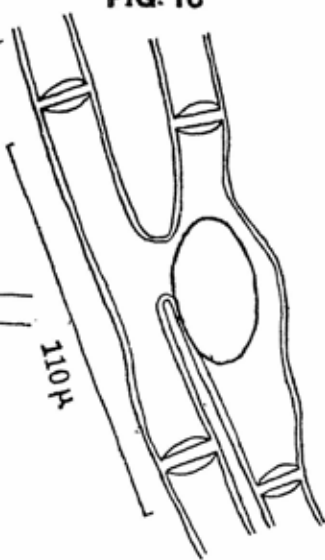
55  $\mu$

FIG. 1



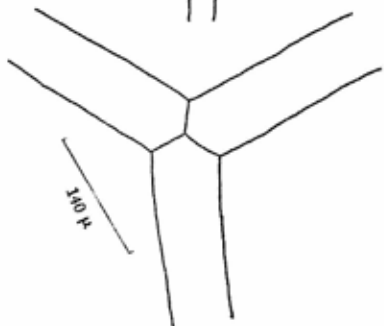
200  $\mu$

FIG. 10



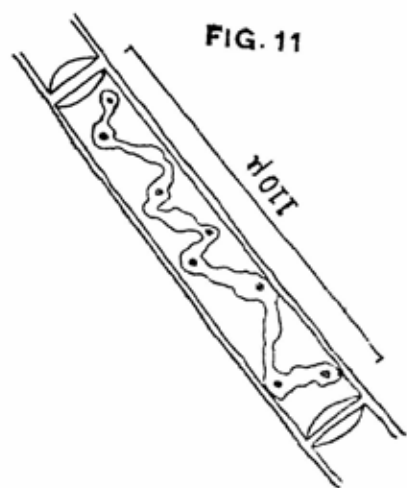
110  $\mu$

FIG. 2



110  $\mu$

FIG. 11



110  $\mu$

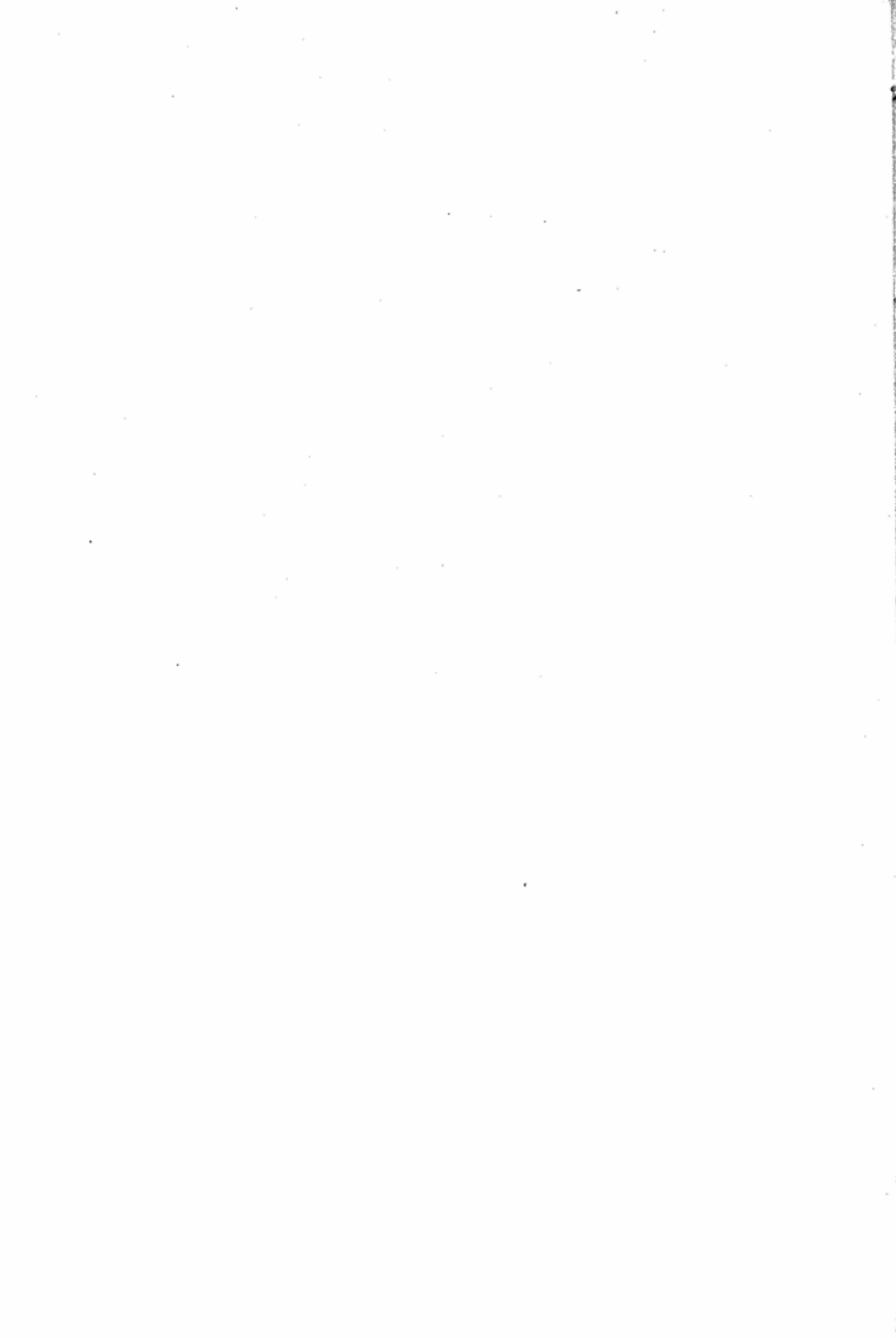


PLATE II.

FIG. 12

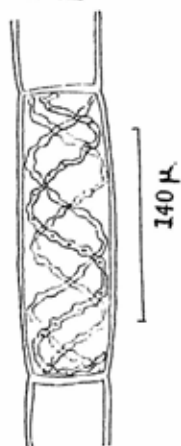


FIG. 13

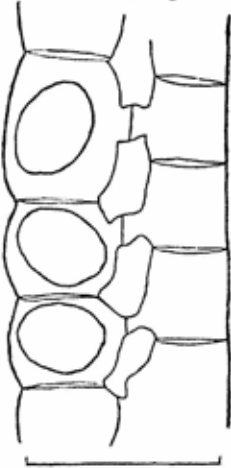


FIG. 14

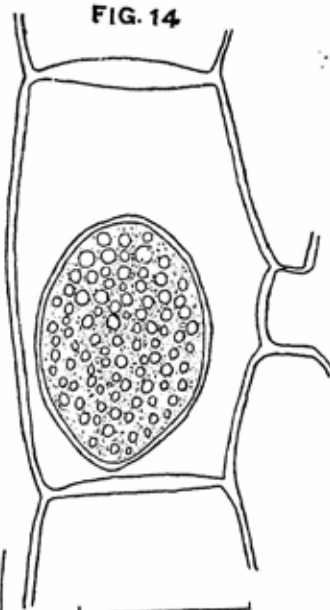


FIG. 15

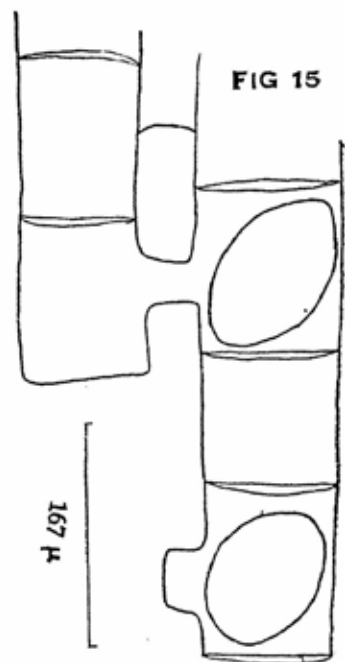


FIG. 16

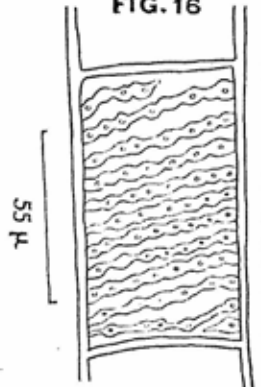
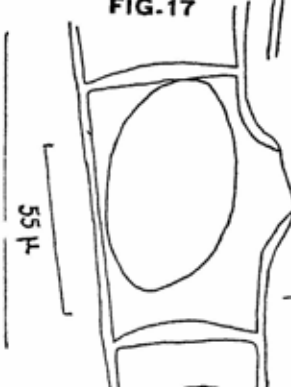
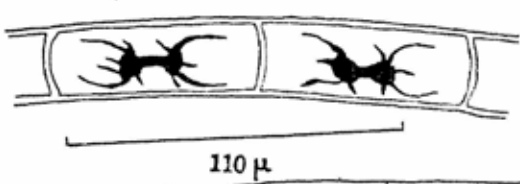


FIG. 17



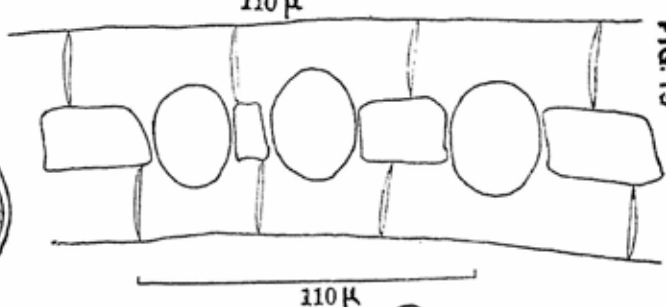
55 μ

FIG. 18



110 μ

FIG. 19



110 μ

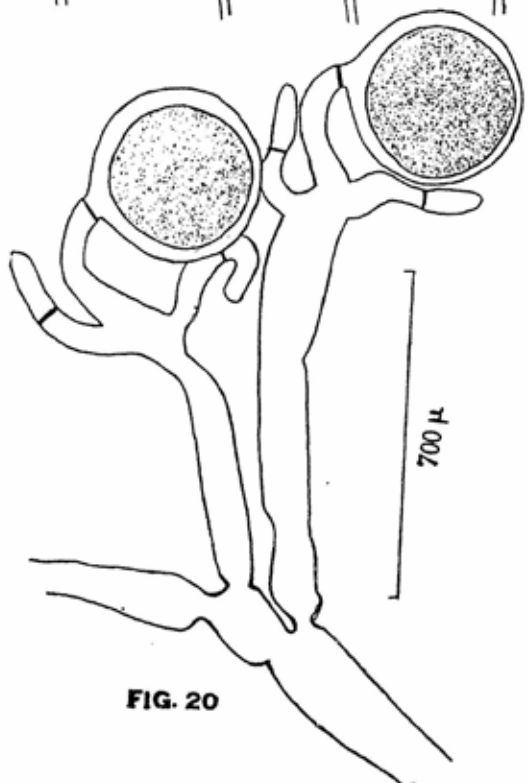
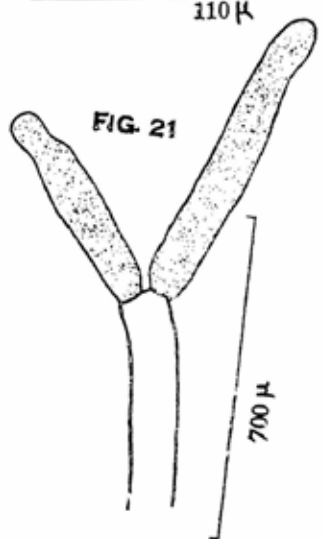


FIG. 20

700 μ

FIG. 21



700 μ



## HANDA—FILAMENTOUS GREEN ALGAE FROM BURMA.

West, G. S. (1907) : Report on the Fresh-water Algae, including Phytoplankton, of the third Tanganyika Expedition, conducted by Dr. W. A. Cunningham, 1904-1905.

*Jour. Linn. Soc. Bot.*; XXXVIII, 81-197

West, W. and West, G. S. (1907) : Fresh-water Algae from Burma, including a few from Bengal and Madras.

*Ann. Roy. Bot. Garden, Calcutta*, VI, 175-260.

West, G. S. and Fritsch, F. E. (1927) : A Treatise on the British Fresh-water Algae. Cambridge.

Zeller, G. (1973) : Algae collected by Mr. S. Kurz in Arracan and British Burma.

*Jour. Asia. Soc. Bengal*, XLII, 175-193.

## Explanation of Figures.

## PLATE I

- Figs. 1-2. *Hydrodictyon reticulatum* (L.) Lagerheim.  
 Fig. 3. *Enteromorpha intestinalis* (L.) Link, natural size.  
 Fig. 4. *Oedogonium Borisianum* (Le Cl.) Wittrock.  
 Figs. 5-6. *Oedogonium rufescens* Wittrock sec. Hirn.  
 Figs. 7-8. *Bulbochaete dolliformis* Borge.  
 Fig. 9. *Spirogyra tenuissima* (Hass.) Kutz.  
 Fig. 10-11. *Spirogyra inflata* (Vauch.) Rab.

## PLATE II

- Figs. 12-14. *Spirogyra neglecta* (Hass.) Kutz.  
 Fig. 15. *Spirogyra nitida* (Dillw.) Link.  
 Figs. 16-17. *Spirogyra crassa* Kutz.  
 Figs. 18-19. *Zygnema pectinatum* (Vauch.) Ag. var. *conspicuum* (Hass.) Ktrch.  
 Fig. 20. *Dichotomosiphon tuberosus* Ernst. Fragment of thallus showing antheridia and oogonia. Also note constrictions of coenocytes.  
 Fig. 21. Do. Showing club-shaped akinetes.

## VARIATIONS IN *MIMOSA PUDICA* (LINN.)

BY

M. R. HANDA, M. Sc.

AND

L. P. KHANNA, M. Sc.

(University College, Rangoon.)

(WITH PLATE III)

The present paper is the result of numerous observations made on *Mimosa pudica* (Linn.) The plants in the vicinity of Rangoon grow wild and can be seen in any abundance along waysides, open places and damp situations. Plants were obtained for class work but, on examination, were found to differ in several respects from the types described by Hooker (1879) and by Haines (1925). During a period of two months a large number of specimens from different habitats were therefore collected and subjected to critical analysis for verification. The writers are of the opinion that the variations observed, although interesting, are not of sufficient weight to warrant the creation of a new variety and thus unnecessarily add to the burden of taxonomic literature. Below is given a synopsis of the general characters of *Mimosa pudica* found in Rangoon, followed by notes on the variations.

### General Characters.

*Leaf*.—Petiolate, petiole 2.5—8.5 cm., hairy on the under-surface; stipulate, stipules minute, triangular, 0.3—0.56 cm. long 0.15—2.8 cm. broad, diffusely hairy on the margin which is slightly pinkish, pinnae between 2—4 (fig. 1—3), subpetiolate, 2.5—7.9 cm. long. Leaflets 20—50, hairy on the margin, hairs as long as half the breadth of the leaf (fig. 4) glabrous, subcoriaceous.

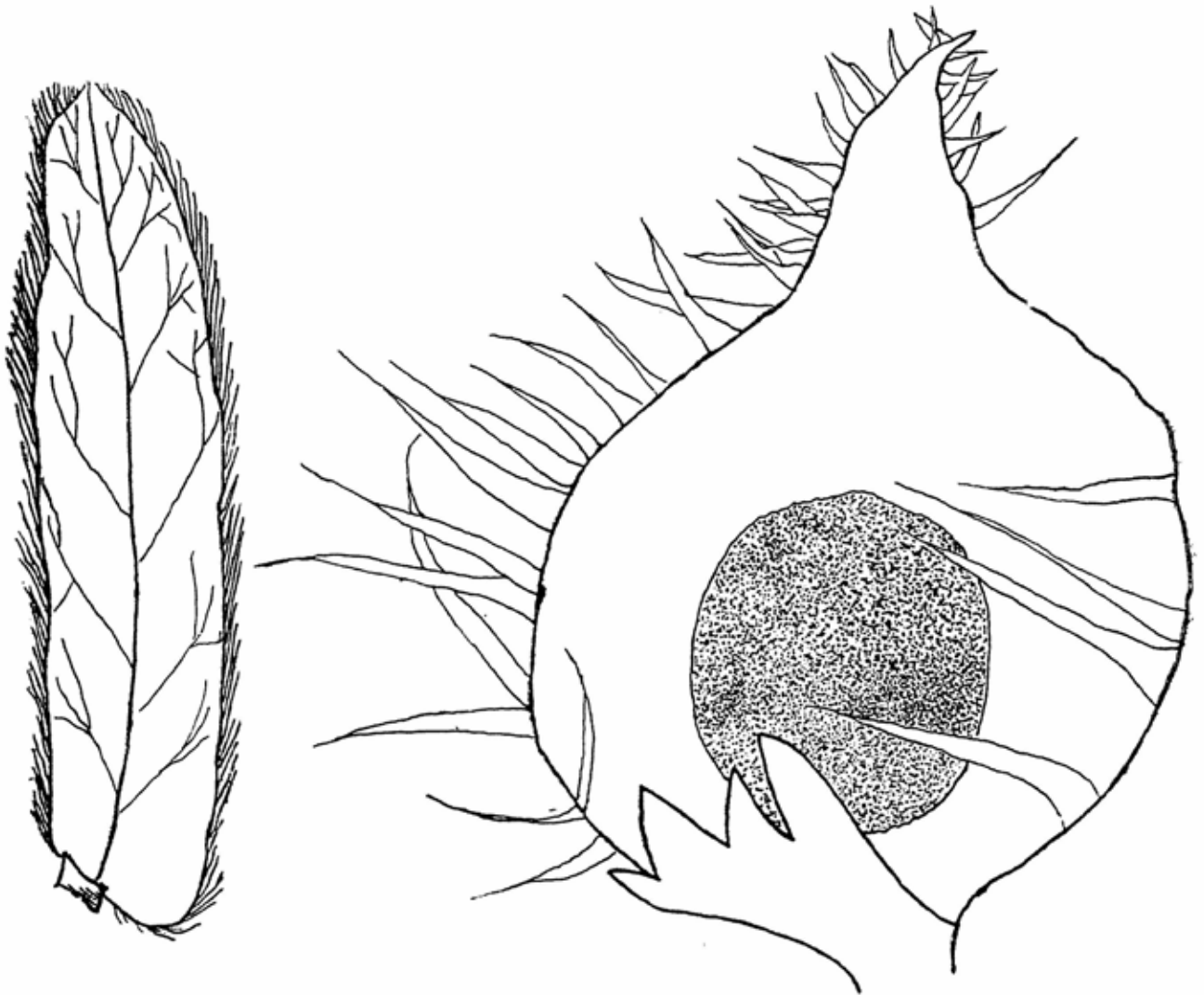
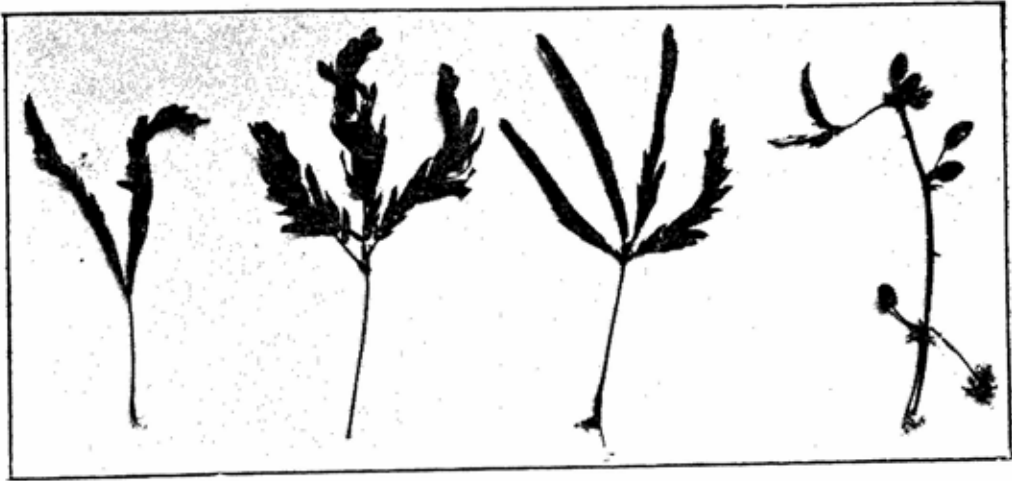
*Flowers*.—In small heads. 1—4 in each axil (fig. 5); other characters constant.

*Pod*.—0.5—1.5 cm. long. 1—4 seeded. With brownish, strong hairs on dorsal and ventral sutures, hairs as long as breadth of pod (fig. 5).

### Variations.

*Leaf*.—The number of pinnae as described by Hooker (1878) varies from 3—4, while Haines (1925) and Willis (1925) describe only 4: in

PLATE III.







## VARIATIONS IN MIMOSA PUDICA (LINN).

local plants, as will be clear from the following statement, 2-3 is the most common number :—

Number of plant	Number of 2 pinnæ	Number of 3 pinnæ	Number of 4 pinnæ
25	indefinite	indefinite	40
33	"	"	75
45	"	"	89
65	"	"	139

The number of the leaflets vary between 20-50 as opposed to 24-40.

**Pod.**

The number of seeds in a pod varies from 1-4, 2 and 3 being the commonest numbers. This statement is supported by the table below.—

No. of fruit heads examined.	No. of pods with 4 seeds.	No. of pods with 3 seeds.	No. of pods with 2 seeds.	No. of pods with 1 seeds.
25	0	indefinite	indefinite	12
30	0	"	"	15
40	1	"	"	19
50	5	"	"	27

**Literature.**

**Haines, H. H.** (1925). The botany of Bihar and Orissa. London, Vol. i pages 321-323.

**Hooker, J. D.** (1879). The flora of British India. London, Vol. ii pages 291-292.

**Willis J. C.** (1925). Flowering plants and ferns. Cambridge, pages 426.

## A PRELIMINARY NOTE ON BURMESE CHAROPHYTA

BY

B. P. PAL, B.SC.

*University College.*

The present brief paper is a preliminary notice of an investigation into the systematics, ecology and economic importance of the Charophyta of Burma, and is the outcome of research carried on at the Biological Laboratory of University College, Rangoon. As the publication of the complete paper with its accompanying illustrations will probably occupy some considerable time it was thought that a preliminary note might not be altogether without interest to those interested in this group of Cryptogams.

The writer has not here included descriptions or illustrations of any of the species to which reference is made as such a course would detract from the interest of the subsequent account. Though it was originally intended to publish an account of the new species, on second thoughts this idea was abandoned and the arrival of more literature awaited before venturing to describe the supposedly new species. For this reason the present account is mainly confined to the enumeration and consideration of the distribution of the various species collected, and to a brief survey of a few general facts about the Charophyta.

The plants were found to flourish between the months of August and March, dying out in the extreme dry season and the first month or so of the monsoons when careful search failed to reveal their presence. The difficulties of collection in so large a country as Burma where botanical methods are not yet familiar to the greater majority of the inhabitants are manifold, and consequently the areas examined are necessarily few and isolated, unlike the case of many European countries where the flora of almost every district has been minutely and competently described. The task of collection is rendered much more difficult by the capricious periodicity displayed by many of the species, for a species occurring abundantly one year may, for no apparent reason, be completely absent from the same locality next year. Thus large masses of *Nitella furcata* Agardh. were discovered in a pond at Kamayut in December 1927 where the following year it was nowhere to be found.

## PAL—A PRELIMINARY NOTE ON BURMESE CHAROPHYTA.

The following table sets forth the names of the species collected together with the localities wherein they were found :—

Name of species.	Locality.
CHARA—	
<i>C. zeylanica</i> Willd .. ..	Between Hebo and Taunggyi ; a variety was also obtained from Mandalay Moat.
<i>C. brachypus</i> Braun .. ..	Taunggyi, Maymyo.
<i>C. erythrogyna</i> Girflith .. ..	Victoria Lakes, Rangoon; Maymyo and Mandalay
<i>C. gymnopitys</i> Braun .. ..	Taunggyi, Maymyo and Okkyin.
<i>C. hydropitys</i> Reichenbach .. ..	Toungoo.
<i>C. Wallichii</i> Braun .. ..	Toungoo.
<i>C. corollina</i> Willd .. ..	Hsipaw.
<i>C. nudus</i> n. sp. .. ..	Maymyo.
<i>C. burmanica</i> n. sp. .. ..	Mandalay.
NITELLA—	
<i>N. furcata</i> Agardh .. ..	Rangoon (Victoria Lakes), Kamayut, Okkyin and Nyaungbinzaik (near Moulmein)
<i>N. acuminata</i> Braun .. ..	Rangoon (Prome Road ponds), Okkyin.
<i>N. mucronata</i> Miquel 1840 .. ..	Rangoon (Prome Road ponds).
<i>N. microglochin</i> Braun .. ..	Mergui.
<i>N. oligospira</i> Braun .. ..	Rangoon (Prome Road, 8th mile).
<i>N. batrachosperma</i> (Reichenbach 1830) .. ..	Maymyo.
<i>N. elegans</i> n. sp. .. ..	Maymyo.
<i>N. globulifera</i> n. sp. .. ..	Maymyo.
TOLYPELLA—	
<i>T. laxa</i> n. sp. .. ..	Kyaikmaraw (near Moulmein).

It should be mentioned that while only a few of the Charas are restricted entirely to mountainous areas (*e.g.* *C. nudus*) or to plain country (*e.g.* *C. Wallichii*), the majority being found both in the mountains as well as in the plains, this is by no means the case with the Nitellas of which only one species so far (not mentioned in the above list) has been recorded both from the hills and the plains, and even then there appears to be sufficient difference between the two forms to warrant the creation of a new variety. It would be premature, however, to attempt to draw any conclusion from this peculiar distribution of the Chareae and the Nitelleae until a much more complete record of their distribution is available. The Nitellas from the Maymyo hills are particularly interesting, two of the three records being new species and the third, *N. batrachosperma* with the exception of two records by Allen from Gonda and Saharanpur, being unknown from India. Both as regards quantity and number of species, the Charophyte flora from the hills is distinctly richer than that from the plains and both Maymyo and Taunggyi yielded a better "haul" than any place on the plains. Other species not previously recorded from Burma are *N. acuminata*, *N. furcata*, *C. Wallichii*, *C. hydropitys* and *C. erythrogyna*. Even the new records of species previously known from Burma represent interesting extensions of distribution since the new localities noted are often hundreds of miles away from those previously

mentioned. Moreover some of the latter are not definite and the records by Kurz from "Pegu," mentioned in Groves' valuable "Indian Charophyta" represent species which probably have been gathered from a large district. An interesting find from Kyaikmaraw near Moulmein, was a plant very much like a typical *Nitella* but with the lateral disposition of the antheridia characteristic of the genus *Tolypella*; this has been provisionally named *T. laxa* n. sp. pending the arrival of more literature. A few doubtful plants have been omitted from the list but it is hoped to include them in the subsequent full account.

As regards seasonal distribution many species appear to flourish only within certain short periods of time though a few are found throughout the greater part of the season favourable for growth (August to March). The following table gives an approximate idea of the seasonal distribution :—

Name of species.	August	Sept.	Oct.	Nov.	Dec.	January	Febry	March
<i>C. zeylanica</i> ..								
<i>C. brachypus</i> ..								
<i>C. erythrogyna</i> ..								
<i>C. gymnopitys</i> ..								
<i>C. hydropitys</i> ..								
<i>C. Wallichii</i> ..								
<i>C. Corallina</i> ..								
<i>C. nudus</i> ..								
<i>C. burmanica</i> ..								
<i>N. furcata</i> ..								
<i>N. acuminato</i> ..								
<i>N. mucronata</i> ..								
<i>N. microglochis</i> ..								
<i>N. oligospira</i> ..								
<i>N. batrachosperma</i> ..								
<i>N. elegans</i> ..								
<i>N. globulifera</i> ..								
<i>T. laxa</i> ..								

Investigation is being carried out as to the possible effects of the pH concentration of the water of ponds and streams on the distribution and growth of the Charophytes. Up to the present the indications are

that a high pH content is favourable and a low inimical, but this conclusion should be regarded as tentative pending the accumulation of more data. Data is also being collected as to the economic importance of these plants and an attempt is being made to grow a local species in a glass jar with a view to studying its development. The results of these and other investigations are not yet sufficiently complete for any conclusions to be drawn but will be published in the fuller account promised above. It may be here mentioned that the work was commenced under the direction of Mr. M. R. Handa: the writer is also much indebted to Dr. F. J. Meggitt for the valuable suggestion to investigate the effect of pH of habitat on the growth of Charophyta.

### Summary.

1. Burma presents an interesting field for the study of Charophytes, a fair number of new records and a few new species having been discovered by the writer in a comparatively short space of time, in spite of the difficulties in the way of collection.

2. The hills have yielded a richer Charophyte flora both as regards quantity and number of species.

3. The Chareae are usually to be found both in the hills as well as in the plains but the species of Nitelleae are usually confined to the hills only or to the plains.

4. The best season for the growth of the Charophytes is between the months of August and March.

5. Few species flourish throughout this period of time, many appearing and dying off early, while others appear later on in the season.

### References.

- Allen, G. O. (1925). Notes on Charophytes from Gonda. *Bombay Nat. Hist. Soc. Journal*; Vol. XXX No. 3.
- Allen, G. O. (1928). Charophyte Notes from Saharanpur, U. P. *Journal Ind. Bot. Soc.*; VII, 49—69.
- Groves, J. (1924). Notes on Indian Charophyta. *Journal Linn. Soc. Bot.* XLVI, 359—376.

# THE PHYSICAL GEOGRAPHY OF THE GIRNAR HILLS, KATHIAWAR

BY

S. P. CHATTERJEE, M.Sc.

*Lecturer in Geology and Geography, University College, Rangoon*

## Introduction.

It was in connection with the mapping of the Girnar Hills, I had the opportunities to study its physical geography. The Girnar hills are situated to the east of the capital city of the state of Junagadh, in the peninsula of Kathiawar. The Kathiawar peninsula is bounded on the northern side by the gulf of Cutch and the little Rann of Cutch, on the southern side by the gulf of Cambay. The Arabian sea washes her eastern shore. There are multitudes of states in the Peninsula each owned either by a Hindu Raja or a Muslim Nawab. In the south-western part of Kathiawar, lies the state of Junagadh. It is a second class feudatory state ruled by a Nawab. The chief glory of the state lies in the Girnar hills. The magnificent mass of mount Girnar with its rugged sides and other prominent geographical features has drawn the attention of people from time immemorial. The result is that to-day we see innumerable shrines built on the various parts of the Girnar hills and dedicated to the gods of Hindus, Jains and to Muslim saints. (Plate IV, fig. 1.)

The state has in its possession the famous 'gir forest' the only place in India, where even to-day the lion prowls in the darkness of night.

## Area and its extent.

We covered an area of 70 sq. miles. The area lies roughly within  $21^{\circ}27'$  to  $21^{\circ}35'$  N. Latitude and  $70^{\circ}31'$  to  $70^{\circ}40'$  East Longitude.

## Previous literature.

F. Fedden of the Geological Survey of India published an account on the geology of the Kathiawar Peninsula in Gujarat (Mem. G.S.I. XXI) in the year 1885. This area, well suited for the study of petrographic types both from a descriptive and a genetic point of view, came to his notice and he has mentioned the occurrence of several kinds of diorites, Quartz felsite in this area. But his observations and descriptions of the rock types of this area are too meagre to reveal the wonderful and complicated nature of the magmatic differentiation of the rocks from the parent magma. It was in the year 1900 the first attention of the petrologists was drawn to this area by the publication of a paper by Dr. Evans on the nepheline-syenite and the associated Monchiquite collected from this locality.

During the summer vacations of 1924, Prof. Mathur and his colleagues visited the area and mapped only the northern portion of the hill. The hill was again visited during the summer of 1925 with a view to complete the work undertaken in the previous year; this year I had the privilege to associate myself with the work.

### Topography.

The physical features of the Girnar hill are very striking. The hill consists of a central mountain with its axis running east and west on which lie the high peaks of Ambai, Goraknath, Dattatreya, Kalika Tonk, and Ghurmukha. This is surrounded by a broad annular valley divided by radial ridges which joins the central mass to the outer circular ranges of hills.

The pucca road leading to Girnar passes through a natural gate provided by a steep gorge of the outer Joginia hill. The outer hills surrounding the main mountain are dissected at several other places by a number of steep gorges. Standing on any of the high peaks of the central mass (Plate IV, fig. 2.) the physical geography of the whole hill can be best observed. We will see first of all, several disconnected ridges lying on the circumference of a circle, drawn with a radius which is roughly equal to one of the radial ridges, the centre of the circle being the main mass. The average height of these outer hills is 2,000 ft. If we proceed from the palace to Sakkarbagh, we will notice a ridge to our right, this ridge runs in a N. N. E.—S. S. W. direction and ends at a distance of about  $\frac{1}{2}$  a mile S. S. E. of the village of Derawal; the other terminating point of this hill lies to the east of the city of Junagadh the height of the one is 1,830 ft. and that of the other is 1,572 ft. There are two prominent peaks in this hill. The portion of the hill which lies towards the city and Sakar-

bagh is known as Joginia hill. The other portion facing 'Derawal' is called Choripani. Proceeding onward we will find another ridge separated from the first by a river valley; the axis of this hill runs roughly in a N.E.-S.W. direction. As in the case of the previous one, this hill also has two prominent peaks; the first one is called "Addo" (height 1,200 ft.) and the second one, is known as the Peetlio-ka-pani (height 2,290 ft.). Other notable ridges are those of "Malbella Ghor", "Lhass-pawan", Sajariali 'Datarpuri', 'Kalidhar' and Bhainsla.

Gadhekot, Kunchia and Khorial lie to the south of mount Garin.

Next let us study the radial ridges. We next find four radial ridges; they are the following.

1. The one that comes from a spur a little to the South-East of Addo and joins the central mass at Kalka Tank.
2. The other that comes from the Lhasa Pawan and joins the central mass at Ghurmukha.



These two form roughly an angle of  $90^\circ$  with each other and each with axis of the central mass forms an obtuse angle.

3. The next ridge forms a connecting link between the main mass at 'Ambaki' and 'Choraphorti'.

4. The fourth connects Koribara with the central mass at Gaomukhi. The angle between these two ridges is the same as that of the previous ones.

*Plains and plateaus* :—Another striking feature of the area is the presence of a number of small patches of low plains bounded on all sides by the high hills and covered with dense vegetation. There are altogether four patches of some importance. The plains to the west and north are more or less flat. The plain to the south, which is known as Boria forest is an undulatory one. This plain is drained by a deep gorge.

The next point of importance is a broad plateau, lying to the S. W. of Datarpir (2,779 ft. height).

*Drainage* :—The Junagadh state is drained by ten main rivers, but no river of any importance rises from the Girnar hill. There are numerous ravines dissecting the whole area at several places. These ravines are dry for the most part of the year, but during the rainy season even a single heavy shower of rain fills these ravines with water in a few hours time and the current becomes so swift that to cross it is to endanger one's life; the author had a bitter experience of this one afternoon.

*Lakes* :—Lakes, natural or otherwise are absent in the area. But the 'vanished lake' is one of traditions of Junagadh. In the recent years many authentic records have been collected which adduce ample proof of the fact that famous reservoir really existed even in so remote a period as B. C. 300. Sudharsana was the name of this ancient lake at the foot of Joginia hill (Plate V, fig. 3.)

*Rock types* :—The principal formations of this area are of igneous origin. The mutual relation of the rocks clearly show that they have been derived from the same parent magma. The list of the principal igneous rock types is as follows :—

- |                       |                 |
|-----------------------|-----------------|
| 1. Basalt.            | 4. Monzonite.   |
| 2. Nepheline syenite. | 5. Basalt.      |
| 3. Diorite.           | 6. Lamprophyre. |

*Distribution of the principal rock types* :—Granophyres and allied acid rocks from the main mass of the southern hills. All the high peaks of the southern hills are made of this rock. The names of the peaks—Gadhekot and Kunchia, can be mentioned in this connection. In the northern hills the outcrops can be seen only in the two localities the Choripuri ridge and the Joginia ridge. These rocks are so compact that

PLATE IV.

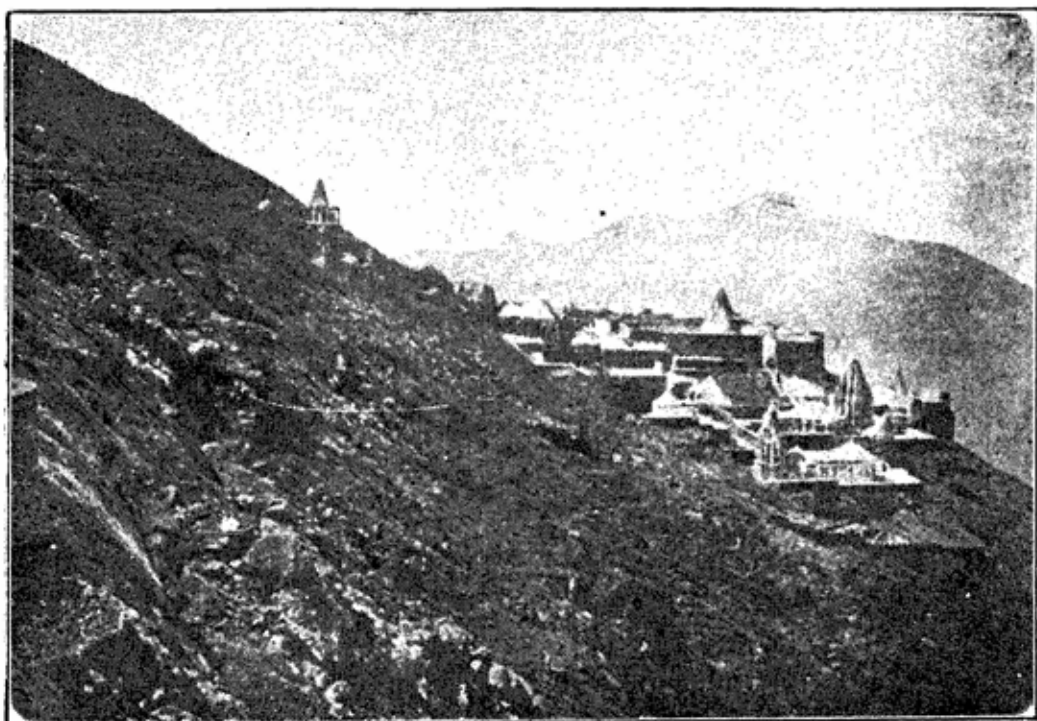


Fig. 1.  
Shrines on the slope of the Girnar Hill.



Fig. 2.  
Staircase leading to the Dattatreya Peak.



PLATE V.

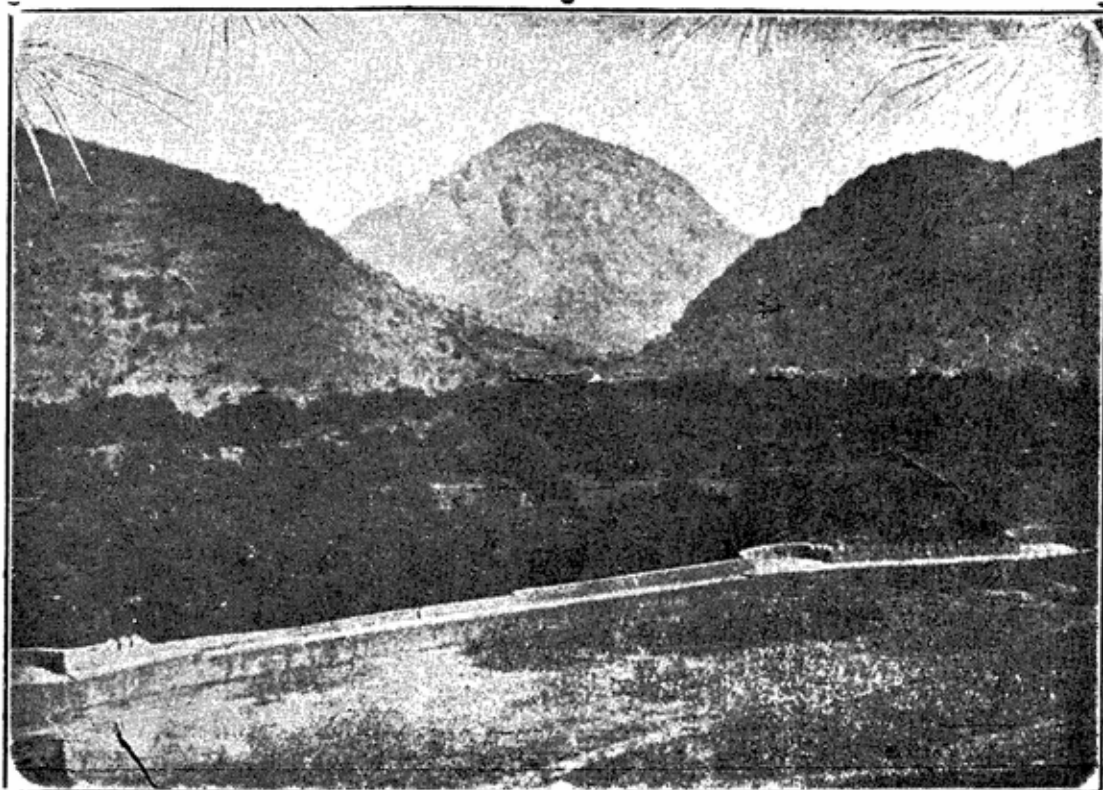


Fig. 3.

Girnar Hill: Dense vegetation covers the place previously occupied by the ancient lake "Sudarsana."



Fig. 4.

Asoka's inscriptions on Granophyre.



PLATE VI.

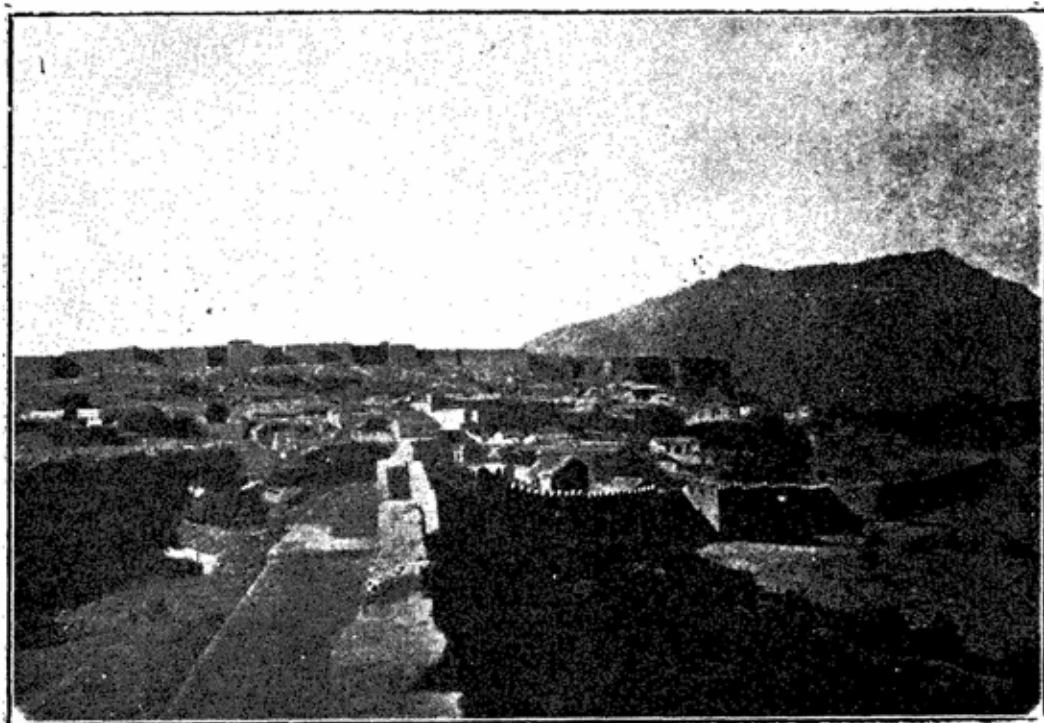


Fig. 5.  
The ruins of the Upper Kot Fortress.

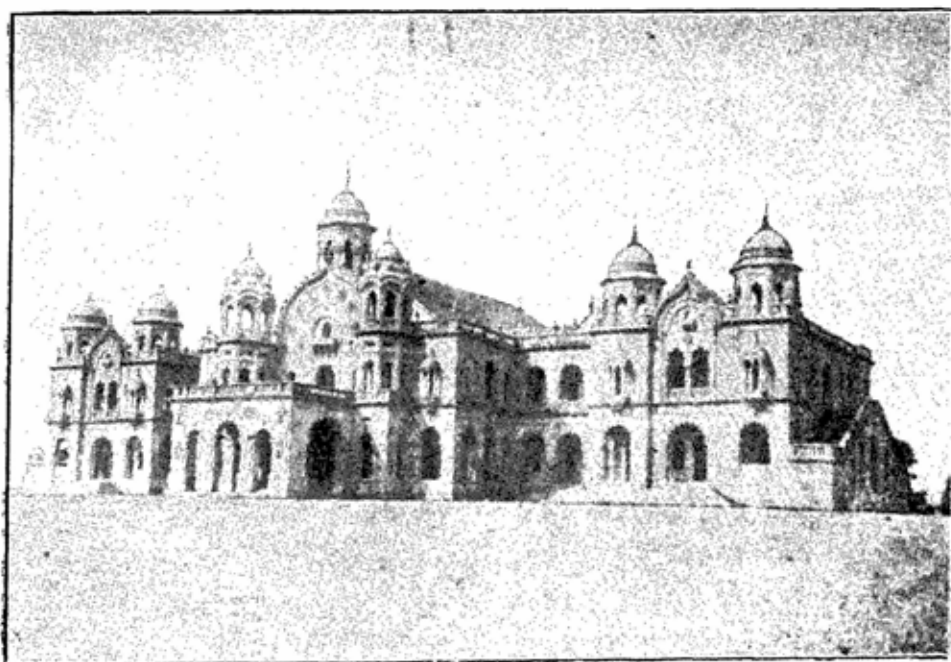


Fig. 6.  
The Bahadur College, Junagadh.



they can resist the various agencies of weathering for a considerable period of time. It is for this reason the rocks are used for building purposes for which it is quarried. The ancients knew the resisting power of these rocks to weathering and accordingly inscriptions have been made by them on big pieces of this rock. The well known inscriptions of Asoka and Samudra Bahan are on this rock, which are legible even to-day, though they had to resist weathering of several centuries.

Olivine gabbro forms the radial ridges which emanate from central Girnar *e.g.*, the ridges of Kori Bora, Matri, Jogi Dhosa, Chorighori, Lhasa Pawan. It is generally found at the base of the central mountain and it can also be seen in the plains under a thin cover of the alluvium.

Basalts form the outer-circular hill ranges round the central pile. The ridges of Bhansla, Dataper, Addo, etc., are also composed of this rock. Another belt of basalt round the diorite monzonite rock of the central mass.

Lamprophyres occur as small veins.

Nepheline syenite occur as intrasve in monzonite, diotite, gabbro and basalt.

I conclude these pages with a line or two on the antiquities of the Girnar hill and the adjacent country. Besides the famous inscriptions of Asoka and Samudra Bahan (Plate V, fig. 4) on a big piece of Granophyre, several pieces containing some inscriptions lie scattered in the hills and valleys. It is a pity that this place though full of archaeological remains has not been worked out extensively. The fortress of Upperkot (Plate VI, fig. 5) draws our first attention. Regarding the antiquity of the fort Col Tod says, every stone of Upperkot carries us back to the days when the Yadus had paramount sovereignty in India and that means at least the second century of the Christian era.

### References.

#### GEOLOGY :—

**Mathur, K. K.** and others. Magmatic differentiation in Mount Girnar, Journ. Geol. Vol. XXXIV.

**Krishnan, M. S.** (1926). The petrography of rocks from the Girnar and Oshan hills. Rec. G. S. I. Vol. LVIII.

### Explanation of Plates

#### Plate IV.

- Fig. 1 Shrines on the slope of the Girnar hills.
- 2 Stair-case leading to the Dattatreya peak.

#### Plate V.

- Fig. 3 Girnar hill. Dense vegetation covers the place previously occupied, by the ancient lake 'Sudarsana'.
- 4 Asoka's inscription on Granophyre.

#### Plate VI.

- Fig. 5 The ruins of the Upperkot fortress
- 6 The Bahauddin College, Junagadh.



# GEOLOGICAL RECONNAISSANCE IN THE SOHAWAL STATE, CENTRAL INDIA

BY

S. P. CHATTERJEE, M.Sc. ,

*Lecturer in Geology and Geography, University College, Rangoon.*

(WITH PLATE VII)

## I.—Introduction.

A short trip to the Sohawal state in Central India was arranged by Prof. K. K. Mathur of the Hindu University, Benares, with a view to investigate the mineral resources of the state. The author of the present note had the fortune to associate in that investigation. The results of the investigation have not been published so far as the detailed work had to be abandoned for reasons better known to the state authorities.

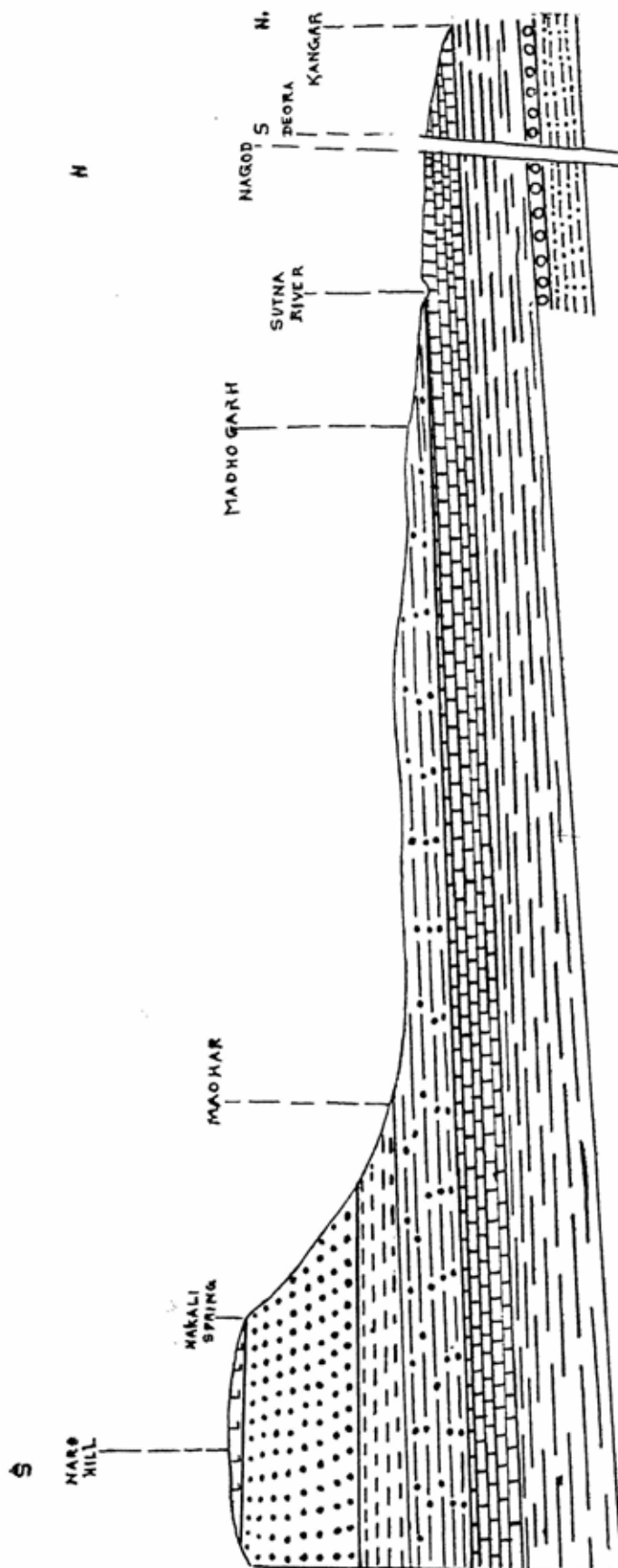
## II.—Area and extent.

The state of Sohawal is situated in Central India. It is ruled by a chief titled the Raja Saheb. The state consists of three disconnected strips of land. One of these strips includes the Naro Hills to its south ; it occupies an area of about 45 sq. miles and is surrounded by the states of Rewa and Nagod. The state of Kothi comes between the other two territories. Of these two the western-most one runs in N.W.-S.E. direction for about 25 miles with an average width of 4 miles. Sohawal, the capital city of the state, situated approximately between 80°37' E. Long. lies in this strip. The third strip covers an area of about 125 sq. miles. It runs in the N.-S. direction for about 15 miles and then turns to the west for some distance.

## III.—Physical features.

(a) *Topography.*—The Naro Hills is the highest hill in the state. It is 1900 ft. above the general level of the country. It has a flat plateau at its top which stretches all along its length. The hill runs first for about 2 miles almost in the East to West direction and then begins to run for the same distance in the N. W.-S. E. direction. It presents steep scarps on both the sides and there are only few points where the ridge can be crossed. The Amirti area is more or less flat and is covered with jungles at places. Several hills of average height of 500 ft. are present in this area. The Lidri group of hills consists of two parallel ridges which run in an E.-W. direction. Sambhar and Khajuria are ridges parallel to each other. The other hills of less importance are the following, Rajha,

PLATE VII.



SCALES:-  
Vertical Scale  
1" = 100 ft.  
Horizontal Scale  
1" = 2500 ft.

Section From Naro Hill To Nagod & From Deora To Kangar

- LATERITE
- UPPER BHANDER SANDSTONE
- SIRBU SHALES
- LOWER BHANDER SANDSTONE
- BHANDER LIMESTONE
- GANURGARH SHALES
- DIAMONDIFEROUS CONGLOMERATE
- REWA SANDSTONE



Niveri, Terha, Siddha, Brui hills. All these are situated to the south of Amirti. The third portion of the state is almost a plain country. The capital town and some of the principal villages of the state are situated in this strip. The Amardari hill forms the northern boundary of the patch. Nankar is the only solitary hill. It is situated to the N. W. of Sohawal, the capital town of the state.

(b) *Drainage*.—The river Suthna is the principal river flowing along Sohawal-Nagod boundary for more than half of its length. The general direction of the flow is N. W.-S. E. This river flows in the limestone country and has developed several cataracts in its bed. One cataract near the city-bridge is worth mentioning. The river has several tributaries, the principal of which is Triveni. In the Amirti area the only river of some importance is the Dudmukhia stream. The Asram or dwelling place of the famous ascetic 'Sarohang Rishi' is situated on the bank of the principal tributary of the Dudmukhia stream.

#### IV.—Previous literature.

No published account of the geology of the state exists, though the neighbouring state of Panna and other Vindhyan areas have been worked out in some detail. A bibliography is appended at the end of the article.

#### V.—The stratigraphy of the Sohawal state.

##### *Upper Vindhyan system :—*

Upper Bhandar	..	Upper Bhandar sandstone.
Lower Bhandar	..	Sirbu shales.
		Lower Bhandar sandstone.
		Lower Bhandar limestone Ganurgarh shales.
Upper Rewah	..	Upper Rewah sandstone with diamondiferous conglomerate at the top. Jhiri shales.
Lower Rewah		Lower Rewah sandstones with Panna shales with diamondiferous conglomerate at the base.

The sandstones are important as all the topographical features are due to the weathering of the sandstones hill. The Sohawal state is entirely made up of the Upper Vindhyan rocks which consist of several thick masses of sandstone with alternation of shales and limestone preserving a remarkable uniformity over wide area. Ripple marking and false bedding are well developed which clearly show that the rocks were deposited in shallow water. The stratifications in the upper Rewa sandstone are very irregular. In Malet's type area the thickness of this series varies

considerably from 500 ft. to 6,000 ft. This series also varies greatly in extent and thickness in the Sohawal state; the same thing has been noticed by Coulson in the Bundi state. In Sohawal the colour of the upper Rewah sandstone is white with slight yellowish tinge. There is a conglomerate band between the upper Rewah and the lower Bhandar beds near Kangar. This conglomerate band has yielded a few diamonds in the adjoining state of Panna. The general direction of the strike of these beds is E-W. The beds dip to the south at a gentle angle. The Ganurgarh shales lie on the upper Rewah sandstone. The usual colour of the shales in this area is grey with a slight greenish tinge. The more ferruginous varieties are reddish. In some places the shales are micaceous. The earthy varieties are quite common. The Ganurgarh shales pass into the Bhandar limestone. In Mallet's type area the thickness of this series varies from 100 to 250 ft. In the Sohawal state the thickness varies from 200 to 300 ft. The usual colour is blue, slightly greyish. It is probable that these rocks might have been formed from calcareous solutions under marine conditions. Coulson holds this view regarding the mode of origin of this limestone in the Bundi state. The lower Bhandar sandstone is also well developed in the Sohawal state. It is coarse in texture. The prevailing colours are red and dirty white. In some places they are fine grained. The Sirboo shales are best exposed at the foot of the Naro hill where they pass conformably to the upper Bhandar sandstone. The shales are ferruginous at some places but generally they are micaceous. The predominant colours are green-grey and red. As usual they are thinly cleaved. All the high hills of the state are composed of the upper Bhandar sandstone. The thickness of this series varies from 200 to 3,000 ft. in Mallet's type area. But in the Sohawal state the thickness is over 1,000 ft. This series is poorly developed in the Bhundi state where Coulson notices the thickness to be only 80 ft. The texture of the sandstone varies from fine grained to coarse grained. The predominant colour is grey-white. The tops of the high hills are covered by a capping of laterite formed possibly by the decomposition of the trap rock, but no trace of any undecomposed trap has been found on any of these hills (Plate.)

## VI.—Economic geology.

*Sandstones.*—Sandstones of three series, 1, upper Rewah; 2, lower Bhandar; 3, upper Bhandar, are well exposed in the Sohawal state. They are very good as building stones. Some of the white varieties can also be used in the glass industry.

*Limestone.*—There are two big patches exposed in the state. One is exposed near Sohawal town and the other forms the Kotar-Kemri hills, situated about 8 miles to the east of Jaitwar. The limestones are being worked for lime. White clay. White clay generally occurs on

hill tops associated with laterite and sometimes with red and yellow ochres. This clay can be used in the pottery industry.

*Red and yellow ochre.*—These are found associated with the laterite deposits. They are quarried and locally used as pigment.

*Bauxite.*—It occurs in the Naro hills. It is not known definitely whether these deposits can be worked out profitably.

*Diamondiferous conglomerate.*—In the Sohawal state the diamondiferous conglomerate bed occurring between the Ganurgarh shales and Rewa sandstone occur near Kangar. The conglomerate is composed of rounded and water-worn pebbles of quartz and jasper. The matrix is of clayey ferruginous hard substance. No yield of diamond is known from the state though the diamondiferous conglomerate yielded some pieces of diamonds in the neighbouring state of Panna.

### Bibliography.

- Medlicott, H. B.** (1859). "Vindhyan rocks and their associates in Bundelkhand" Mem. G. S. I., Vol. II, Pt. I.
- Mallet, F. R.** (1861). Additional remarks on systems of rocks in Central India and Byal. Mem. G. S. I., Vol. II., Pt. I.
- Mallet, F. R.** (1869). On the Vindhyan series as exhibited in the North-Western and Central Provinces of India. Mem., G. S. I., Vol. VII, Pt. I.
- Vredenburg, E. W.** (1906). Geology of state of Panna with reference to the Diamond bearing deposits. Rec., G. S. I., Vol. XXXIII, Pt. IV.
- Heron, A. M.** (1917). Gwalior and Vindhyan systems in South Eastern Rajputana. Mem. G. S. I. Vol. XLV. Pt. I.
- Fox, Cyril S.** (1923). The Bauxite and Aluminous laterite occurrences of India. Mem., G. S. I., Vol. XLIX, Pt. II
- Coulson, A. M.** (1927). The Geology of the Bundi state, Rajputana. Rec., G. S. I., Vol. LX, Pt. 2.

# A short Note on the Limestone Caves in the Neighbourhood of Nyaungbinzeik, Kyaikmaraw Township, Amherst District, Lower Burma.

BY

H. L. CHHIBBER, D.Sc., F.G.S., F.R.G.S.,  
*Lecturer in Geology and Geography, University College, University of Rangoon.*

CONTENTS				Page.
I. Introduction and previous observers	..	..	..	124
II. Physical features	..	..	..	125
III. Geology of area	..	..	..	126
IV. Description of the caves	..	..	..	127
V. The origin of the caves	..	..	..	129
VI. References	..	..	..	130
VII. Explanation of plates	..	..	..	130

## I. Introduction and Previous Observers.

The writer examined these caves during the month of October, 1927, and he was at once struck with their colossal size and picturesque appearance and considered it useful to make a rough survey of the interior of the caves and to place the observations on record. These caves are situated in Amherst district, a little over 8 miles E. N. E. of the important town of Moulmein. The approach can be best made from the town of Moulmein from which there is a motor road running to the village of Nyaungbinzeik, situated on both sides of the Ataran river crossed at this point by a ferry. Beyond Nyaungbinzeik the only means of transport is a bullock-cart and about one-third the way is situated the village of Babugôn; on the west of which rises rather abruptly the hill called *Htakke taung* crowned with three pagodas which form a conspicuous landmark in the country. Beyond Babugôn the road is lined with toddy trees which lend a very picturesque view to it when seen from the top of the hill mentioned above. The limestone hills can always be recognized from a long distance on account of their unique topography. Being almost bare and devoid of trees of any size, they present a sharp contrast to thickly clad hill ranges composed of sandstones, quartzites, sometimes concealed by a cap of laterite. Their craggy nature, pinnaced and broken appearance is equally worthy of note.

The earliest reference to these caves was made by Captain W. Foley in his "Notes on the geology, etc., of the country in the neighbourhood of the Moulmyeng (vulg. Moulmein). He has mentioned the name of the principal caverns of the district and describes the Bhudda-cave at the Dhammaathat, about 5 miles east of Nga-ku taung. It has been noted in (6)\* that "Fea appears to have been the first zoologist to

\* These numbers represent the references given at the end of this paper.

describe the interior of any of the caves. He visited those near Moulmein and in an interesting letter published by the Geological Society of Italy (*Bull. Soc. Geog. Ital.*, 1888) dealt with their peculiarities and his collecting in them<sup>35</sup>. Unfortunately both these references were not available in Rangoon. The next reference to these caves is by Taw Sein Ko, in regard to the archaeological description of limestone caves in Amherst district of Tenasserim. Temple (5) has described the Kayon-ku (farm cave) along with a number of others in the same district. A plan of the Kayon-ku is given but unfortunately it does not give any idea of the dimensions of the caves as no scale accompanies his figure. A masterly and general account of the "Limestone caves of Burma and the Malay Peninsula" (6) has been published under the joint authorship of Annandale, Coggin Brown and Gravely. Reference to the geology of these limestone hills has been made by Stoliczka and Theobald (3).

## II. Physical features.

The caves under description are situated in Kyaikmaraw township of Amherst district. The limestone hills, remarkable for these caves, rise abruptly from the flat plains, bounded by the Gyaing river in the north, by the Salween on the west and by the Ataran on the south. These plains are usually devoted to paddy cultivation, unless they are covered by marshes and overgrown by weeds. During the rainy season they are all covered with water and resemble a vast "mimic sea" of fresh-water turned green in places (see plate.) The sides of the hills are very steep and craggy in places—sheer cliffs with a vertical drop of a few hundred feet in places. Sometimes the hills are even overhanging with concave slopes due to the detachment of blocks on account of jointing. The sides are lined with pillars both as a result of solution and deposition. In the former case the rock is carved out by water to present such an appearance and in the second case this is due to the formation of stalactites. The limestone is very highly jointed sometimes in several directions which obscures the bedding of the rocks. The exposed surface is very rough with steep and sharp edges. The caves or small hollows are to be seen at all heights in almost every limestone hill. The bare and rugged appearance of these hills is very characteristic as already remarked and reveals their true nature to a trained eye even from a distance. No soil is to be seen at the surface and the vegetation mostly consists of climbers; not many important trees are to be seen. Rain-prints are often well marked, in places about half-an-inch deep and there are often elongated cavities with parallel sharp edges and in places pot holes are to be observed on the sides of the hill. Swallow holes are very common in these hills and sometimes a hole of about one foot in diameter may lead to a huge cave below, several hundred feet long and many feet wide. This was actually observed in the case of Sadaw-ku.



### III. General Geology.

The geology of the area consists of the following formations :

- (1) Alluvium.
- (2) The sandstone and quartzite series (Mergui series).
- (3) The Moulmein limestone series.

(1) *Alluvium* is generally occupied by the paddy fields and in places assume light blue colour during the rains which on drying is of a very pale colour.

(2) *The sandstone and quartzite series.*—The village of Pyaungbinzeik (east) stands on laterite which covers the sandstones and quartzites beneath it. However, a few outcrops are to be seen, *e.g.*, near the landing place of the ferry, where the covering of laterite has been denuded away or was not formed at all. Another conspicuous hill called Htakke taung (marked 176 on the map) formed of these rocks, occurs west of the village of Babugôn. The hill rises rather abruptly from the village and the three pagodas on the hill form a conspicuous landmark in the area. The hill gradually flattens towards the south and sends spurs towards the north. The sandstones and quartzites are generally whitish in colour with yellowish and reddish tints on account of iron staining due to weathering. The rocks are very highly jointed and they are used as metal along with laterite on Nyaungbinzeik-Zathabyin road.

These rocks are lithologically very similar to those developed west of Moulmein, which have not been geologically surveyed yet but are most probably representative of the Mergui series.

(3) *The Moulmein Limestone series.*—The physical characteristics of these limestone hills have been described above. The colour of the rock varies from whitish, light grey to almost black, but the first colour is more prevalent. In places irregular lenses of black limestone occur in white rock and veins of calcite are also seen traversing it. Sometimes boulders composed of angular fragments of limestone are to be seen on the slopes and the size of the individual fragments is very variable, ranging from the size of a pea to that of a fairly big boulder with a diameter of about a foot or so. It probably represents the scree material (talus breccia) which has been cemented subsequently by carbonate of lime. This rock has all appearance of breccia; so I would suggest the name of calc-breccia for it. The limestone is fairly tough and compact and rings under hammer. The age of this limestone is carboniferous and a list of fossils found in these rocks is given in the paper (6) cited above.

#### IV. Description of the caves.

In all there are four caves in the three hills and these are represented on the south-eastern corner of the map sheet 94 H/10 and the southern half of Nga-ku taung is marked on 94 H/11 and the general trend of these hills is north-west-south-east. Originally these hills must have been continuous; they have now been separated and considerably lowered by denudation. The northernmost hill is called Kayon hill (marked Karon taung on the map). This hill is about a mile long and one-third broad and has been named after the village of Kayon, about one and a half miles north-west of the caves. The height of the hill is 589 feet.

There are two very important caves in the hill, both on the eastern side though I was told by the pongyi there that there is another big cave on the west called Ma-saw-ma-ku (*ku* in Burmese means cave) to the north of the second (southern) pagoda on the top of the hill. It was said that before the construction of road to Kayon-ku larger number of people went there but now on account of the easy accessibility of the former, all the visitors come this side. These caves are marked "Farm Caves" on the old map. The caves are frequented both by religious pilgrims and by sight seers. Many people from Moulmein and outside come there for short pic-nics, so much so that the pongyi there told me that about twenty thousand people visit the caves annually. The first cave, Kayon, is situated in almost the middle of the hill. There are three entrances, one from the north-east is called Ku-wa. The second entrance is from the east, the entrance of the cave being higher than the base of the hill, steps have been built of laterite and the passage has been covered with the usual tapering gothic structure commonly seen in Burma. The third entrance is towards the south-east.

On the right of the northern entrance there is a small cave partitioned into three chambers (pl. xi), partly by the growth of pillars. Between the middle entrance and the northern there is a fairly big tunnel which after a distance of about 70 feet, makes a southward bend and continues in that direction till the third entrance is reached and on the right hand side there are two narrow but fairly long chambers. From the third entrance there is a long and straight hall, which is about 300 feet long. At a distance of about 80 feet from the entrance to the main hall, there is a big side chamber on the left, which is about 200 feet long and about 40 feet wide. In this side chamber on the right there is a ladder about 9 feet high, which leads up to a narrow but long chamber; almost opposite to this there is another chamber on the left, constricted in the middle, the opening at the entrance measures about 30 feet and the length is about 87 feet.

*Sadaw cave.*—The cave, as already remarked, is situated at the southern end of the same hill, Karon taung, marked on the map 94H/10

The entrance to cave is narrow, about 8 feet wide, and is at a height of about 75 feet from the ground. This cave is far bigger than the first though no images are to be found inside. It is believed by the local people that when Buddha assumed the form of an elephant, he lived in this cave and hence its name *Sadaw* which in Burmese means a royal elephant. On the right of the cave there is an open amphitheatre with a number of subsidiary chambers. Not far from the entrance there is a sloping chamber on the left with a big sky light about 15 feet high and 8 feet broad, with two minor holes adjacent to it. This cave is in fact a big hall, several hundred feet long and in places about 150 feet wide and appears to have been subdivided into three chambers by the growth of pillars. These pillars in this cave are of very fantastic shapes and gigantic in size, the circumference of some measuring as much as about 100 feet. The most remarkable of these are the umbrella-shaped stalagmites which can accommodate a number of men inside the hollow. The floor of the cave is strewn with boulders fallen from above, some of which look like small hillocks. In places especially in the narrow side chamber towards the right, not far from the entrance, near the first big pillar, terraces have been cut of the rock, which form small reservoirs of water trickled down from the roof. The water in these terraces and other small tanks is very cool and fresh. In the dark part of the cave bats are very abundant, the odour of their excreta causing a prolonged stay to be most unpleasant. The excreta can be used as manure and should be no less useful than guano. The subject has been discussed by Burkill in a pamphlet issued as No. 1 in the *Agricultural Ledger* (Calcutta) for 1911. But it is wondered whether the deposit which is more than an inch thick in places has ever been used for that purpose. In places the floor of the cave, on account of solution along the joints shows the appearance of a sun-cracked surface, especially near the small pools of water. Where the cave terminates it rises by narrow passages which communicate with the swallow holes above, not far below the top of the hill.

The next hill, called either *Aleku taung* or *Taungthonlon*, is a small conical hill with precipitous sides, sheer cliffs almost reaching the top. From a distance its abrupt rise from the neighbouring flat land and its unique appearance make it closely resemble a volcanic plug and the author was struck by its great similarity to Taunggala, a volcanic plug on the south-western slopes of Mount Popa. The hill is crowned with two pagodas with a small saddle in between. There is another small pagoda on the eastern flank of the hill near the cave. The hill as usual is characterised by the presence of well-marked joints and on the south-eastern side, a fairly flat face is to be seen, inclined at an angle of 40° owing to the detachment of rocks along the joint planes. Approach to it during the month of October is very difficult and the writer had to walk through water waist deep in places and full of big leeches.

*Alè-ku* or the middle cave is a very small and simple one compared with the two described above and it is at the eastern base of the hill. There is a semi-circular chamber which is about 19 ft. 8 ins. wide at the entrance and the height of the cave is about 22 ft. The length of the cave is 30 ft. At the bottom of the inner wall there are 3 chambers, the total width of which is 15 ft. Unfortunately at the time of the visit of the writer the cave was full of water and the depth of water in the chambers was about 3 ft., which concealed the lower portion of the cave from view. There is a side chamber towards the north, which is 18 ft. wide and 30 ft. long. No stalactite and stalagmites were seen in this cave.

*Nga-ku* (fish cave) is situated at the southern end of the third hill and is almost inaccessible during the rainy season. All the distance from Kayun taung the writer had to wade in water, not infrequently chest deep but most of the time thigh deep; as the area is traversed by a network of small canals to drain off the water from the paddy fields. There is a very thick growth of weeds, in which one gets entangled and the bottom being slippery it is very difficult to proceed and the journey becomes very tiresome. In the water there are big leeches, very different from the one generally seen on the moist slopes of hills in Burma. They measure from 4 to 6 inches and sometimes more. The cave is a little inside the hill; between the entrance and the cave there is a fairly big amphitheatre with steep vertical walls. It is very likely that the open amphitheatre must have formed part of the cave once and the submerged roof at the present day is represented by the huge boulders strewn on the floor. The form of the cave at the entrance is depicted in Fig. It is elongated and semicircular in form. Unfortunately the cave was then entirely filled with water and so the interior of the cave could not be inspected but the writer was told that there are two chambers, one leading west and the other to the south-east. The cave has been designated *Nga-ku* by the Burmese, on account of its entrance being low and elongated bearing some resemblance to a fish.

#### V. The origin of the caves.

The origin of these caves is fairly simple and as already familiar, they owe their formation to the solvent action of carbonated water on jointed limestone. The water percolates through the joints and dissolves the rock leaving the hollow chambers. The above is put down to rectify the following erroneous statement made by Temple (5).<sup>\*</sup> "The Farm caves, like those mentioned in this paper, are situated in isolated hills of lime-stone rock, which rise picturesquely, and abruptly out of the surrounding alluvial plain and were evidently excavated by the sea at no remote geological period." The author has considered this very carefully in the field and has come to the conclusion that the explanation suggested

by Temple is not tenable. The hollow chambers or caves were seen at all heights and sometimes the small entrances led to very colossal caves inside, e.g. the entrance of the Sadaw-ku is only about 8 ft. while the cave inside at a distance of several hundred feet from the entrance continues to be very broad, sometimes the width is over 80 ft. This must show that the caves owe their origin to an agent that has been working from within. The caves are being enlarged even at the present day and the stalactites and stalagmites are growing in size and in places new ones are springing up. Only in places the growth of these pillars is cutting off or partly dosing the narrow passages leading to some of the subsidiary chambers.

The work was done under the auspices of the of the University of Rangoon to which body the author's sincere thanks are due for financial assistance concerning this paper. The author has also great pleasure in thanking his friend Mr. B. S. Puri, I.S.E., Moulmein, for the general interest he evinced in my work. Acknowledgments are also due to Mr. M. Inui for assistance in taking photographs of the interior of the caves with flashlight.

#### VI. References.

1. 1836. Foley, Capt. W., "Notes on the Geology etc., of the country in the neighbourhood of Moulmyeng (vulg. Moulmein)". *Journ A. S. B.* Vol. V, pp. 269-281.
2. 1837. Malcolm, Rev. H. "Account of the caves near Moulmein", *As Journ, N. S.*, Vol. XXIV., pt. 2.
3. 1873. Theobald, W., "Geology of Pegu", *Mem. G. S. I.*, Vol. X, p. 139.
4. 1888. Fea. L., "Viaggio da Moulmein al Mont Mulai, Tenasserim". *Bull. Soc. Geolog. Ital.* ser. 3, I, 627-689.
5. 1893. Temple Major, R. C., "Notes on Antiquities in Ramannadesa", *The India Antiquary*, Vol. XXXI, pp. 329-331.
6. 1913. Annandale, N., Coggin Brown, J., and Gravely, P. H., "The Limestone caves of Burma and the Malay peninsula", *Journ. A.S.B.* Vol. IX, pp. 391-423.

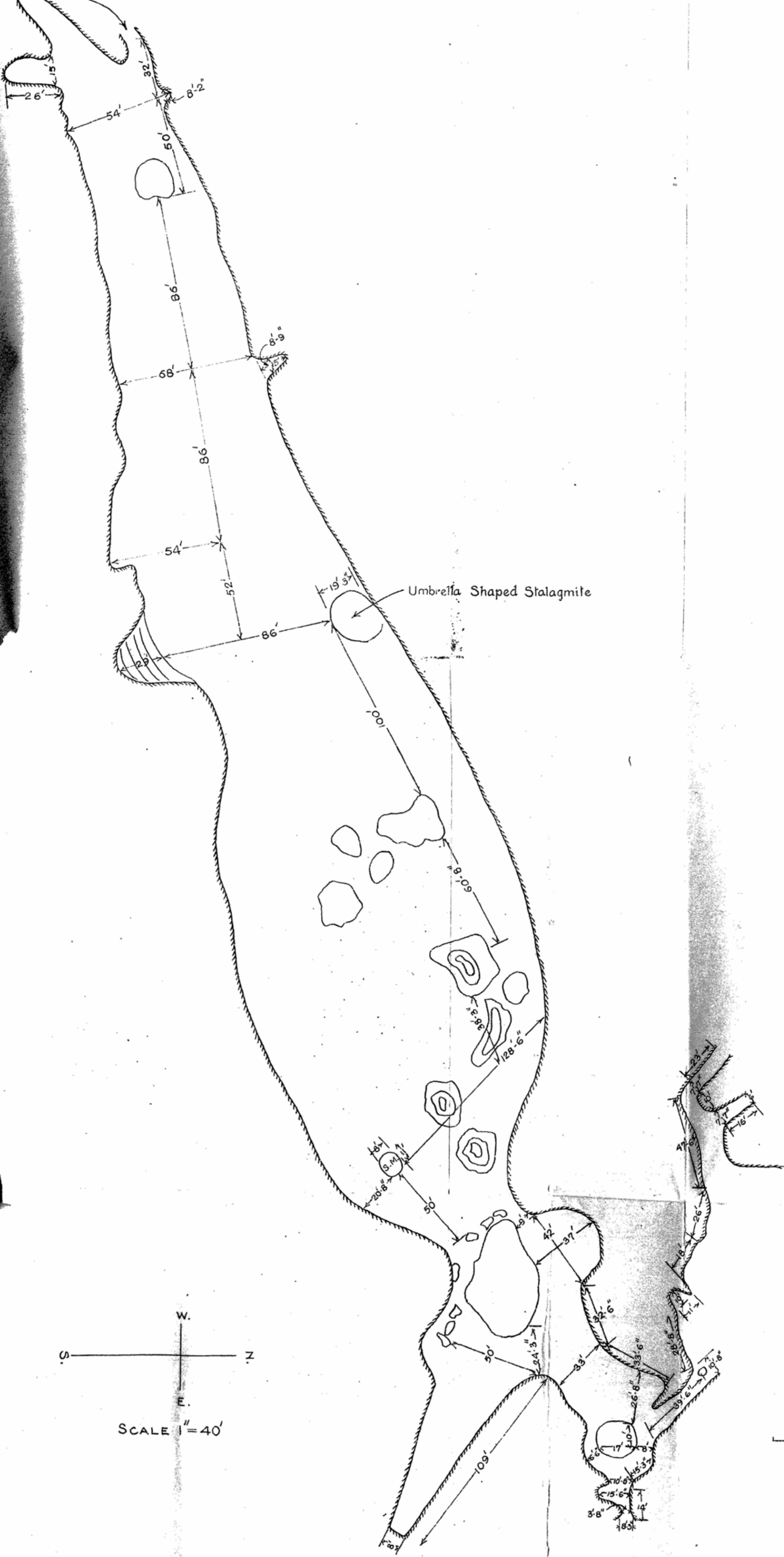
#### VII Explanation of plates.

Plate VIII. A rough plan of the Sadaw cave.

Plate IX. Showing the Kayon-hill and Ale-ku taung on the right with paddy fields, etc. filled with water in the foreground.

Plate VIII.

OVER 50'  
THESE BOTH LEAD TO THE OPENINGS  
ON THE HILL.



SCALE 1"=40'

40 Ft.





PLATE IX.

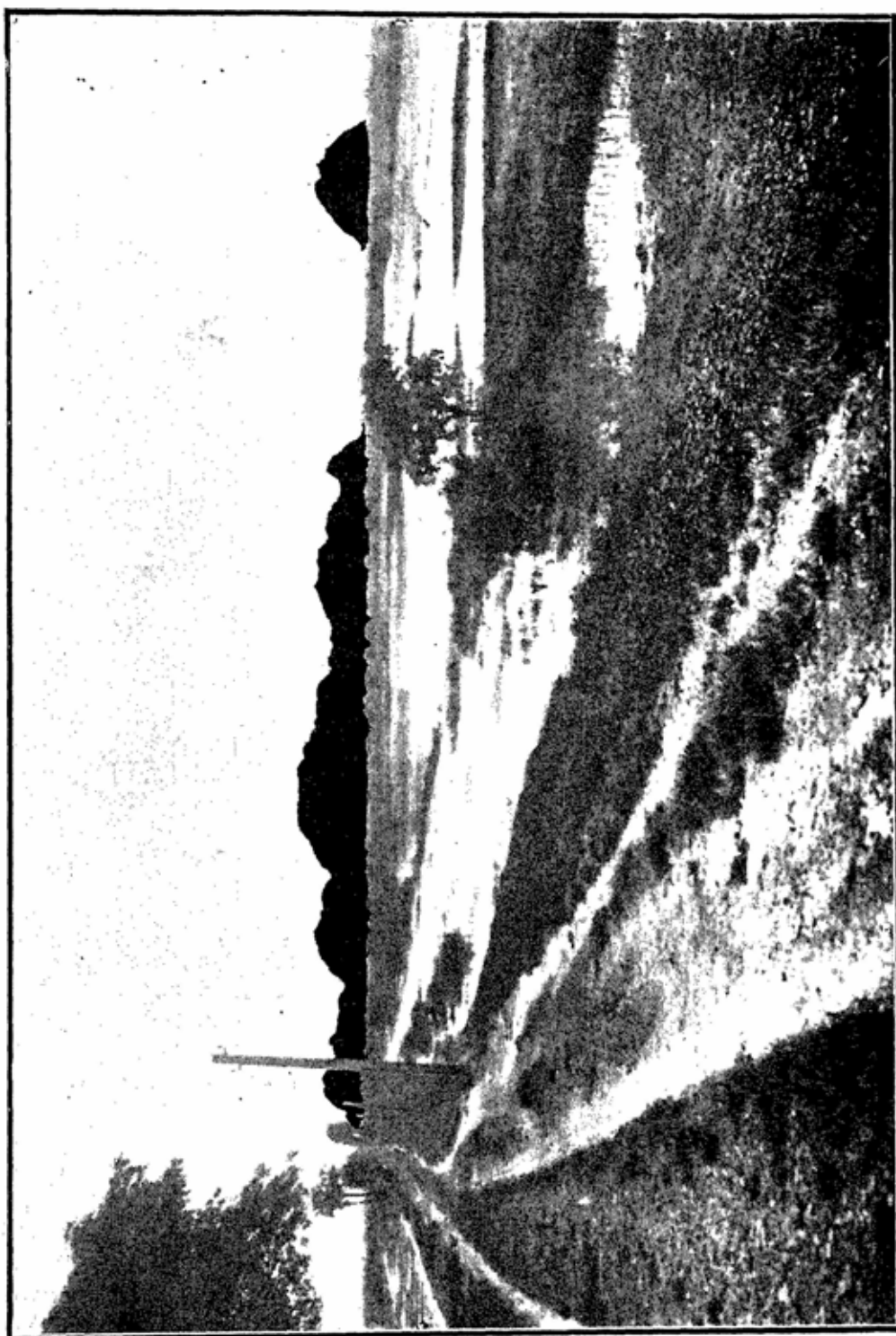






PLATE X.

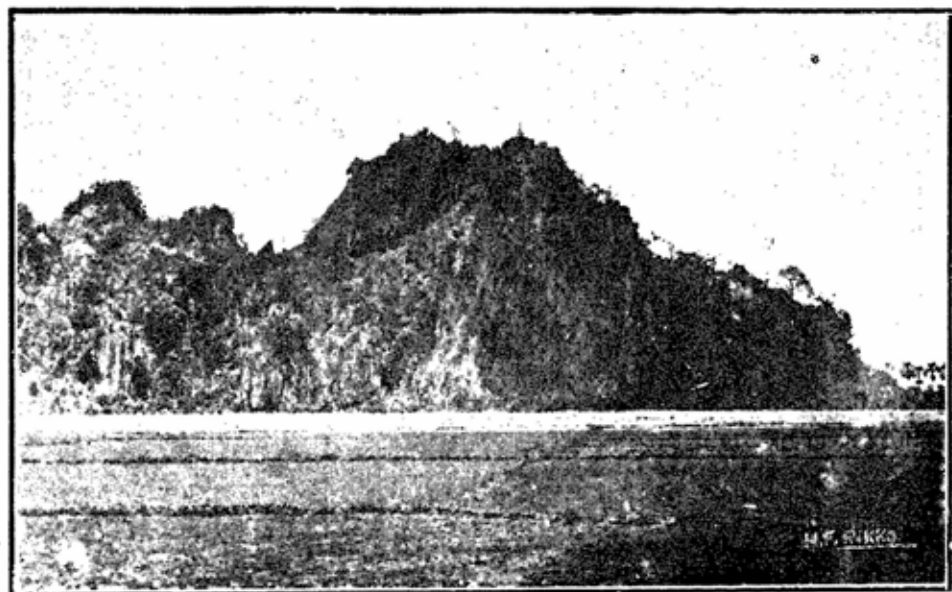


Fig. 1.



Fig. 2.



PLATE XI.

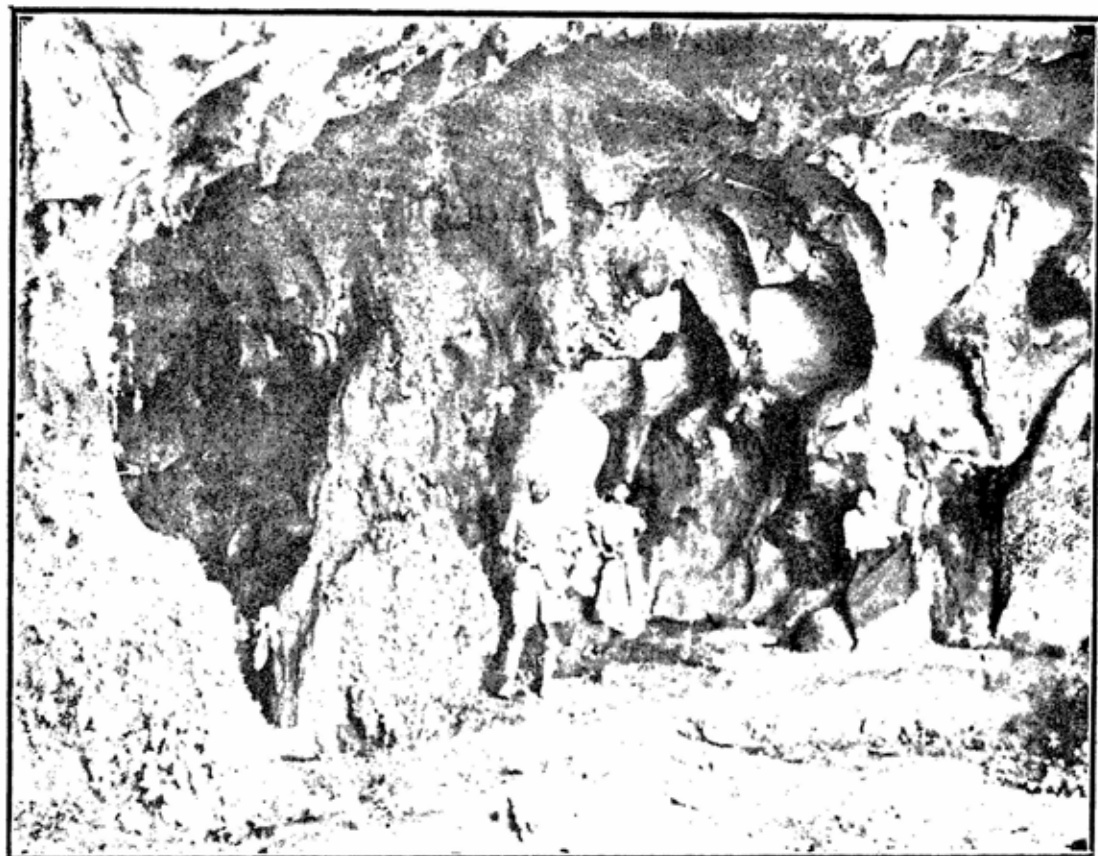




PLATE XII.

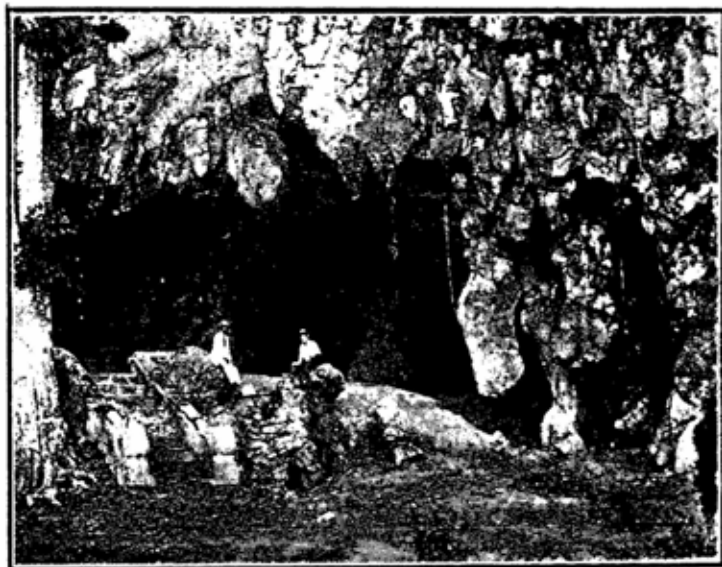


Fig. 1.

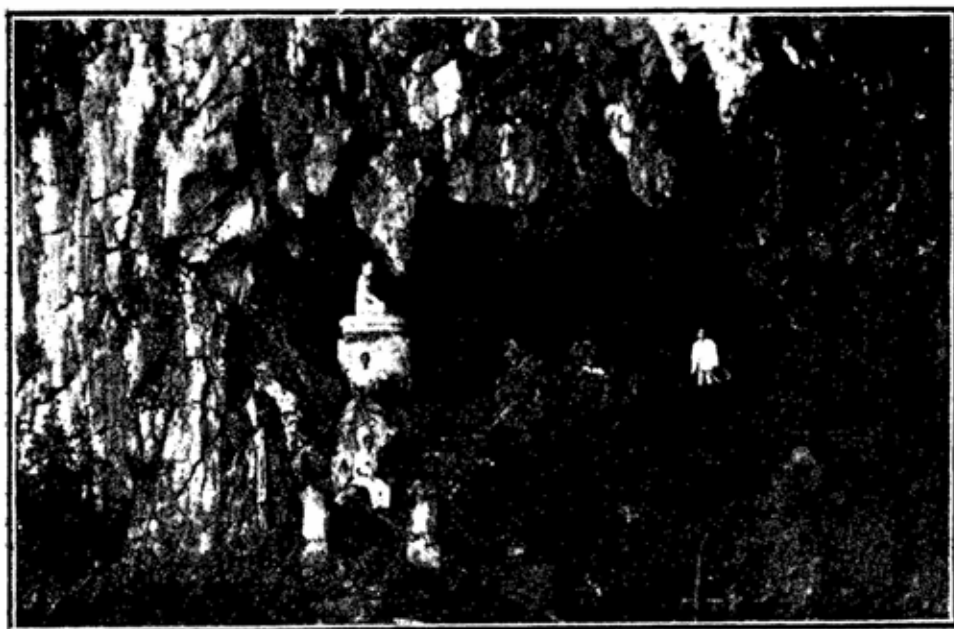


Fig. 2.

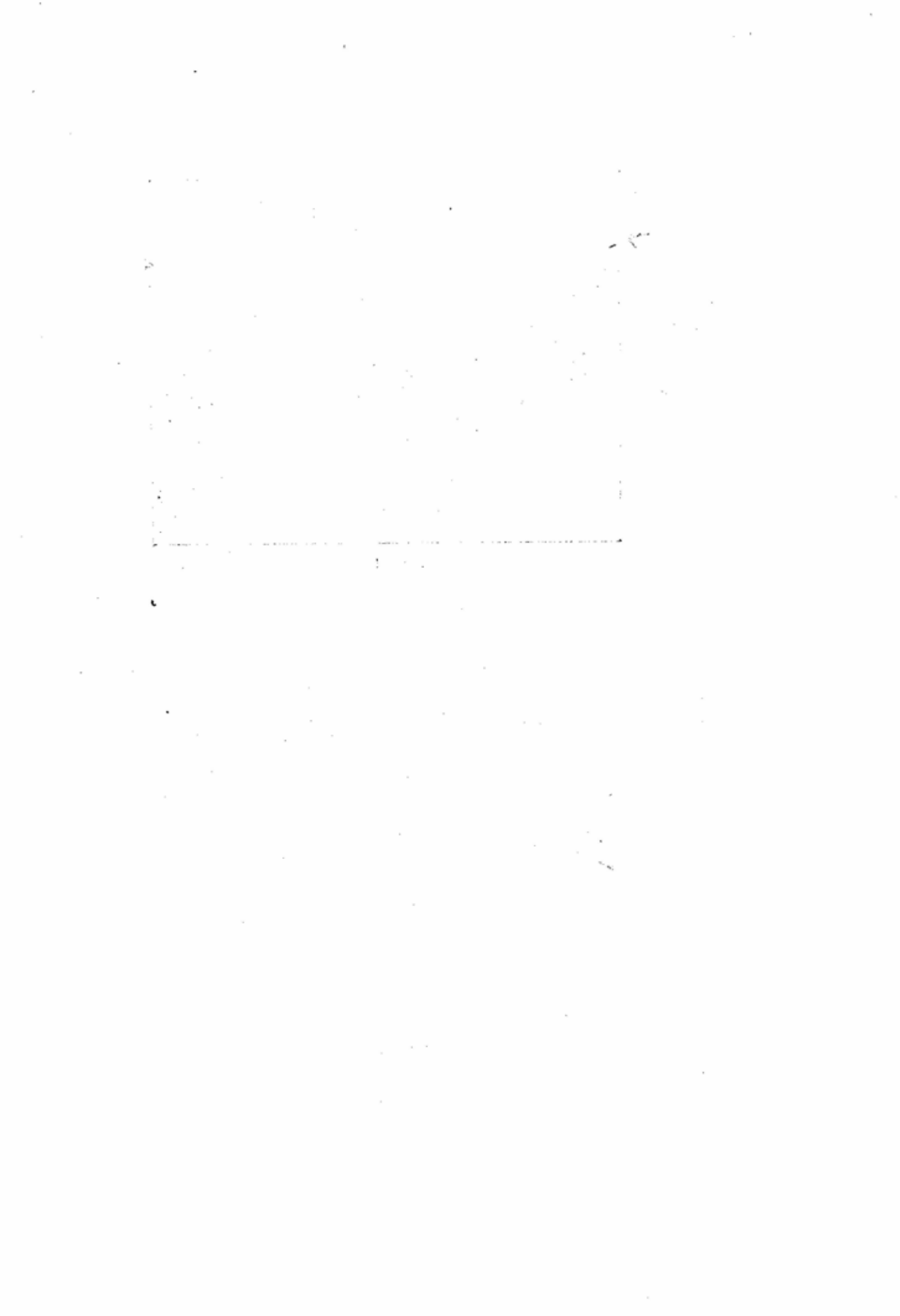


PLATE XIII.



Fig. 1.



Fig. 2.





PLATE XIV.

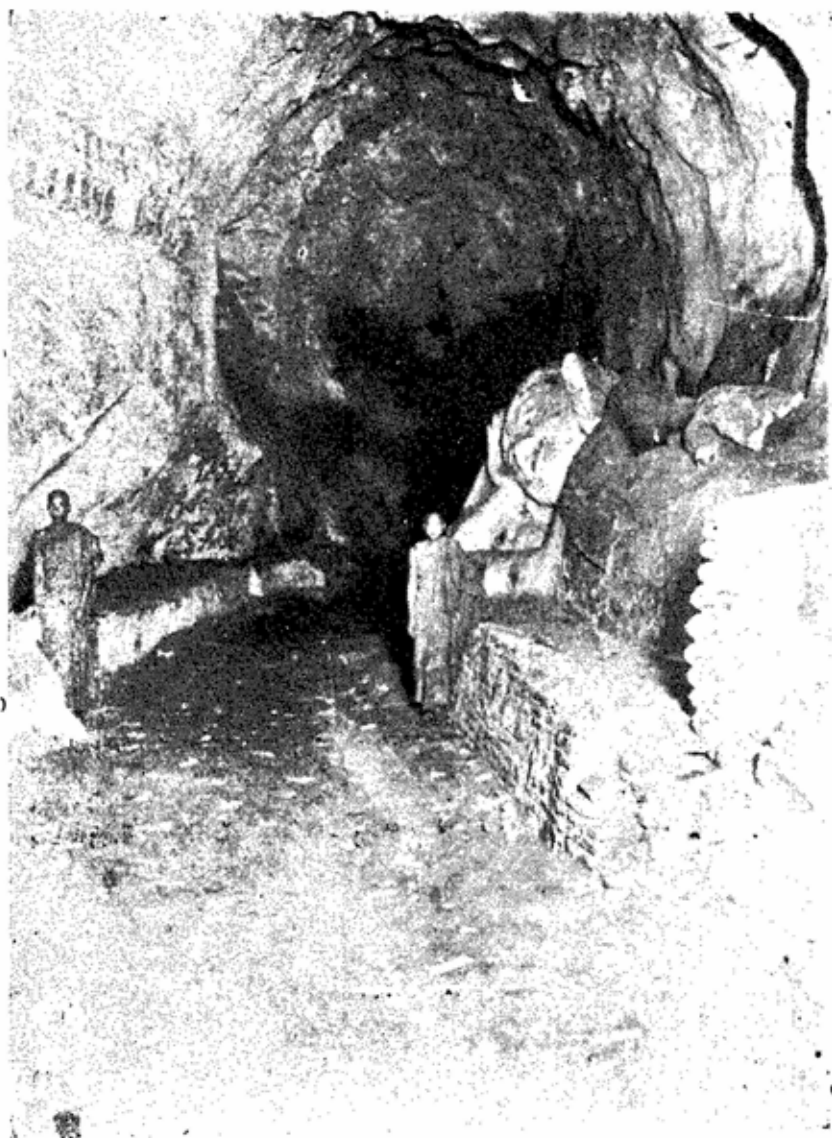
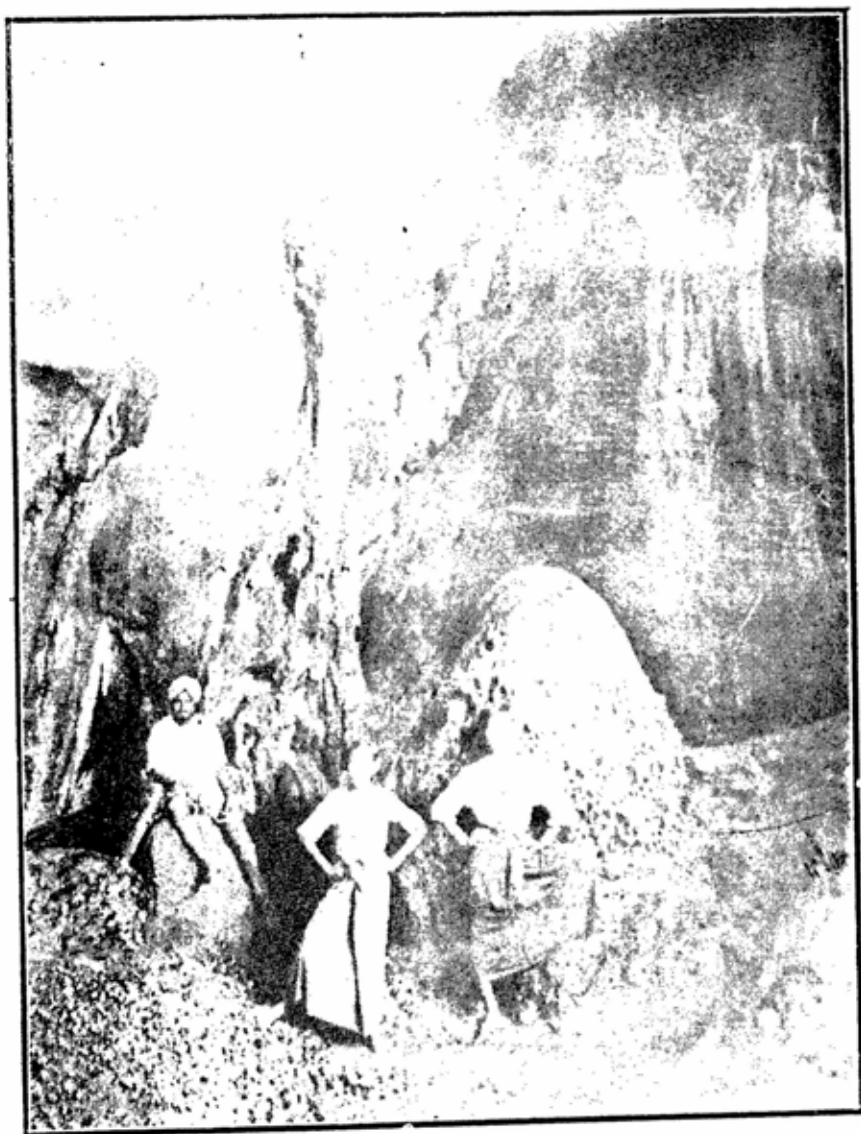




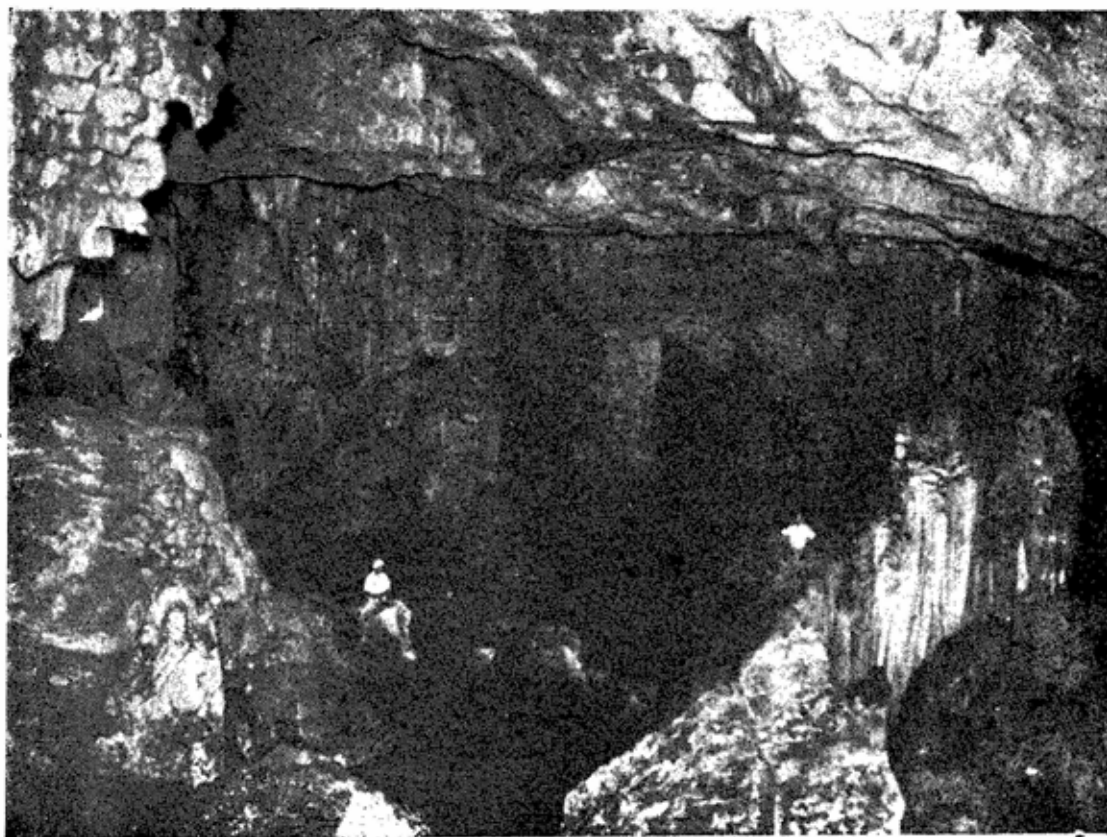
PLATE XV.





1850A

PLATE XVI.





## A SHORT NOTE ON LIMESTONE CAVES NEAR NYAUNGBINZEIK, AMHERST DIST.

Plate X. Fig. 1. Nearer view of the northern part of the Kayon hill.

Fig. 2. Showing the precipitous and overhanging cliffs of the Kayon hill.

Plate XI. Showing a small cave with three chambers on the right side of the northern entrance to Kayon hill (above the tank). Notice the pillars.

Plate XII. Fig. 1. Same as Plate V with part of the northern entrance of Kayon cave.

Fig. 2. Showing the view of the northern entrance of the Kayon cave.

Plate XIII. Fig. 1. Outside view from inside the northern entrance of the Kayon cave.

Fig. 2. Showing the interior of the Kayon cave with a number of images of the Buddha with limestone ledges hanging from above.

Plate XIV. Showing the interior of the Kayon hill (Photograph taken with flashlight). Note the image of Buddha on the right in a reclined posture.

Plate XV. Showing the entrance of Sadaw cave.

Plate XVI. Showing interior of the Sadaw cave. Note the composite pillars on the sides (Photograph taken with flashlight).

---



# THE GEOLOGY OF THE COUNTRY ROUND NAGARI, CHITTOOR DISTRICT, MADRAS PRESIDENCY

BY

R. RAMAMIRTHAM, M.A.,

*Department of Geology, University of Rangoon.*

## I.—Introduction and previous observers.

During the summer of this year the writer paid a short visit to the Chittoor District and examined geologically the country near Nagari and Narayanavanam. The area examined forms part of the Karvetnagar zemindari and is included in sheet No. 570/11 of the one inch survey map. This area was geologically mapped by King (1872) on the one inch to 16 miles during the seventies of the last century. In the introductory pages of his memoir the same author has given an exhaustive summary of the different observations recorded previously. Subsequent to his work nothing appears to have been recorded regarding this area.

## II.—Physical features.

A large portion of the country round Nagari and Narayanavanam\* is covered by small broken hillocks with bare rock masses; from the paddy fields and waste lands there rises the three parallel ranges of hills which are known locally as the Mura Konda, Kudumula Konda and the Gadde Konda. Of these the first is situated at a distance of about four miles north of the town of Nagari and the two latter are situated at a distance of four miles east and north respectively to the town of Narayanavanam. These hills which overlook the valley of the Palar and stretch in a N.-E.—S.-W. direction are parts of the discontinuous Eastern Ghats and are remarkable for their bold profiles and precipitous cliffs; their slopes and sides are covered by bamboo and scrub jungle. In this connection a few remarks regarding the Mura Konda may not be out of place. This hill which terminates at a height of 2,814 feet in the Nagari Nose serves as a conspicuous landmark. From the sea near Madras this nose is seen in a W. N. W. direction and tradition says that bonfires were lighted on top of this Nose every day during the seventeenth century to guide the sailors of the East India Company to reach Madras and in commemoration of this, beconfires are lighted at this spot even now on every full-moon day.

This area is drained by the Narayanavanam or the Arni and the Nagari rivers. These two rivers are dry for a greater part of the year. During the rains heavy freshes from the hills come down; then the cur-

\* Spelt in old records as "Narnavaram"

rent is very strong and traffic has to remain suspended ; but this state lasts only for a few days as the rivers subside as speedily as they rise. Rainfall is very scanty and the temperature is high almost throughout the year—the mean temperature being about 95°F. in the shade.\*

### III.—General Geology.

The geology of the area consists of the archaen gniessose granites, the upper members of the lower Kudappahs, and alluvium besides dolerite dykes which cut through the granites.

The granites lie everywhere within this area along the base of the hills and crop out as small hillocks not more than 300 feet in height from amidst the paddy fields. Throughout, the gneissic structure is noted, but as the gneissic banding is often obscure the strike is seldom made out clearly. In general the strike is North-South (Foot 1873). In addition to this a large portion of the granite is also porphyritic. Crystals of felspar alone occur as phenocrysts which are nearly to or three inches long ; in general the phenocrysts of felspar are arranged with their long axis parallel to the direction of foliation.

In common with the archaen gniessose granites of the neighbourhood these rocks also weather into tors and groups of big blocks.

Elliptical, rectangular or angular patches of hornblende schist are met with locally in the granite. The hornblende schist has probably been derived by the metamorphism of basic segregations in the granite. Taking all bases into consideration these rocks closely resemble the Arcot granites. (Medlicott and Blanford, 1887).

Dykes of Dolerite are sometimes found to traverse through the granites. The dykes are not quite continuous throughout nor are they of any considerable width. The dyke rocks are either black or greenish black in colour and in the field they are seen to break into small hexagonal prisms. They stand out clearly from the granites into which they have intruded.

The weathering of the dyke rocks results in the formation of a deep red soil.

The sedimentary rocks belonging to the upper portion of the lower Kudappahs are composed within the limits of the area examined of quartzites, grits, sandstones and conglomerates. They occur as an outlier in the granite.

In all the three aforementioned hills the sedimentaries are found to rest over the granites in distinct bands. Owing to the short time at

the disposal of the writer and owing to the great extent of debris that covers the slopes and scarps of these hills it was not found possible to map the different bands separately and hence they have been marked in the map under one colour.

Lying immediately over the granites are the conglomerates which form the lowest members of the Kuddapahs and their thickness in a section at Caunbauk where they attain their maximum development has been estimated to be about 1,500 feet. The pebbles composing the conglomerate are not of uniform composition; quartz, and quartzite pebbles usually predominate; occasionally fragments of red jasper and mica schist also occur. The pebbles are generally elongated and are often triangular in cross section. The conglomerates have been strongly seamed with ferruginous matter.

The sandstones are either white or coloured red. The quartzites and grits are also ferruginous in part. These rocks are traversed by a system of joints and consequently from the sandstones especially thin slabs not more than two inches in diameter can be easily cleaved. The grits are made up of rounded grains of mostly quartz which are cemented together by a ferruginous matrix.

None of the sedimentary rocks contain any traces of organic remains. Ripple marks alone are occasionally observed in the quartzites.

The rocks of the Kuddappah system dip at an angle of  $20^{\circ}$  in a W. N. W. direction. On account of the existence of joints parallel to the strike bold escarpments are seen when the hills are viewed from the east and gentle dip slopes are observed when they are viewed from the west.

#### IV.—Petrography.

*Porphyritic hornblende granite.* The specimen No. N/14 hammered from half a mile north of Gandirajakuppam is a slightly rosy, holocrystalline, coarse grained rock consisting of porphyritic crystals of orthoclase felspar which are embedded in a matrix of quartz, felspar hornblende and mica. Foliation is also observed and the phenocrysts of felspar have their long axis parallel to the direction of foliation.

Although the hand specimen of the rock appears to be quite fresh still when it is examined under the microscope it is found to be much altered. Quartz occurs abundantly in two differently sized grains. Some of the orthoclase is porphyritic and is seen to be embedded in a ground-mass of granulitic aggregates of quartz and felspar. This mineral has been considerably altered to kaolin and sericite. There are besides, perthite and oligoclase with marked twinning on the albite law. Micrographic intergrowth between the quartz and felspar is also observed. The chief ferro-magnesian mineral is the green pleochroic hornblende. This is

## THE GEOLOGY OF THE COUNTRY ROUND NAGARI, CHITTOOR DISTRICT.

idiomorphic and exhibits only one set of cleavage. Extinction angles measured on the ortho-pinacoidal cleavage do not exceed ten degrees. Twinning with the twin plane parallel to the ortho-pinacoid is also present. Closely associated with the hornblende is biotite which has been completely altered to the pale green and feebly pleochroic chlorite. This in conjunction with fine magnetite dust is disseminated in linear patches in the section. Hexagonal and needle shaped crystals of Apatite occur as accessories.

A sort of fluxion structure akin to 'flaser structure' has been developed by the aggregation of granulitic grains of quartz, felspar and mica in nearly parallel streaks which are of very small width. Besides, both the quartz and felspar exhibit marked undulatory extinction. These features indicate that the rock has been subjected to pressure. The specific gravity is 2.68.

The *altered biotite granite specimen* No. N/19, collected from half a mile east of Nettamkhandriga tank is a white holocrystalline coarse grained rock in an apparently fresh state. The minerals composing this rock are quartz, the grains of which vary from one to two millimetres in diameter, white felspar and black mica. Biotite is especially abundant and occurs in regular patches in the rock. Small crystals of copper coloured garnet also occur.

## Micro-characters.

The thin section, when examined under crossnicols is found to consist of a mosaic of quartz, felspar and biotite. The different allotriomorphic sections of quartz are all packed up together. One piece of quartz is studded with numerous rectangular and cubical inclusions of felspar. Orthoclase felspar occurs in plenty; oligoclase also occurs but the albite twin lamellae are seen to be bent. Microcline with its characteristic cross-hatched structure and perthite also occur. The ferro-magnesian mineral is the pleochroic biotite which occurs as elongated flakes and is disposed in linear groups. It has been partially altered to chlorite. Garnet and apatite occur as accessories.

The peculiar feature about this rock is that in addition to the undulatory extinction exhibited by the quartz and felspar the boundaries of the quartz and felspar patches are often marked by a thin string of fine powdery mica. The specific gravity of the rock is 2.5.

The *augite dolerite specimen* N/5 taken from near the junction of the Nagari river and the Nagari Railway Station road is a black coloured and heavy rock which rings under the hammer. It was removed from a dyke cutting through the granite. This rock is seen to break as hexagonal masses. It is a holocrystalline fine grained rock and only shining crystals of felspar can be made out with the help of the pocket lens,

## Micro-characters.

A thin section of the rock when examined under the microscope is found to be composed of feldspars, augite, magnetite and ilmenite. The plagioclase feldspars are all thoroughly idiomorphic and are ophitically enclosed by big plates of augite. The former shows lamellar twinning and the extinction angle measured on the albite lamellae indicates that they range from oligoclase to andesine. The pyroxene is the colourless augite, malacolite. It possesses either octagonal or prismatic outlines. It is also twinned with the twinning plane parallel to ortho-pinacoid. Some of the augite laths penetrate each other and give rise to cruciform structures. Ilmenite and magnetite occur as accessories. The specific gravity is 2.7.

The *enstatite dolerite* specimen No. N/23 from the dyke near Net-tamkhandriga is a black, holocrystalline, fine grained rock with fine needles of feldspar and on weathering gives rise to a deep red soil. The specific gravity is 2.73.

The thin section exhibits ophitic texture very well. It is completely holocrystalline and large plates of colourless augite, malacolite, enclose ophitically prismatic forms of the plagioclase feldspar. As the latter is very much altered it has not been possible to make out its specific character. Enstatite also occurs but it has been almost completely converted into bastite which is found to be composed of elongated and parallel fibres which are isotropic. Only small islands of doubly refracting enstatite are left behind. A small patch of brown hornblende is also seen. Some of the hornblende has been converted into pale green feebly pleochroic amphibole and this in turn has been altered to serpentine with lattice structure (antigorite). As accessories ilmenite and magnetite occur.

The *ferruginous conglomerate* No. N/12 from  $\frac{1}{2}$  a mile west of Pataruru village is a blackish brown rock which is composed of subangular and rounded pebbles of different minerals which are of various sizes and which are strongly cemented together by ferruginous matter.

A thin section of this rock when examined under the microscope is found to be composed entirely of a mosaic of differently sized pebbles of banded quartzite, and quartz set up in haematite.

The *ferruginous quartzite* specimen No. N/25 from the top of the Nagari nose is a hard medium-grained pinkish rock which is made up entirely of quartz fragments. These are strongly cemented together by a ferruginous matrix. The ferruginous matter sometimes predominates to such an extent as to give rise to definite black bands within the pink rock.

## THE GEOLOGY OF THE COUNTRY ROUND NAGARI, CHITTOOR DISTRICT.

Under the microscope a thin section of this rock is found to be composed of angular fragments of quartz which show marked undulatory extinction and which are full of rutile needles and fluid inclusions. Secondary growth of some of the grains is also noted.

The *grit* specimen No. N/17, from the saddle of the Nagari hill is a brown coloured rock which on weathering gives rise to fine sand. It is composed of uniformly sized particles of quartz which are partly cemented by silica and partly by ferruginous matter.

When a thin section of this rock is examined under the microscope, a regular mosaic of quartz grains is observed under cross nicols. It is in part conglomeratic also.

## V—Summary and conclusions.

The physical features and the geology of this area are quite simple. The rocks met with are gneissose granites, dolerites, conglomerates, sandstones, grits and quartzites.

In the granites the gneissic structure is not always quite clear. The strike of the bands is N-S. Some portions of the granite are porphyritic also. Two types are met with. One is the pink, hornblende granite and the other is a white biotite granite. These two do not appear to be members of one and the same formation. Only detailed examination can reveal their exact relationship. Locally they contain patches of hornblende schist which have been derived by the alteration or basic segregations. This group of rocks has been subjected to pressure.

Small dykes of dolerite cut through the granites. There has been no change in the dyke rock or the granite as a result of the intrusion. The dykes are made up of either enstatite or augite dolerite.

The conglomerates, sandstones, grits and quartzites lie over the granites and occur as regular bands one on top of the other. These belong to the upper portion of the lower Kuddapah formation, and within this area they occur as an outlier in the granite. The general dip of the whole group is 20 W. N. W. The sedimentaries are highly ferruginous in character. The pebbles of the conglomerate bed which lies immediately above the granite appear to have been derived from the dharwar rocks of the adjoining country.

**VI.—Explanation of plates.**

Plate XVII. Fig. 1. Geological sketch map of the country round Nagari and Narayanavanam.

Plate XVIII. Fig. 1. Profile of the Nagarimura Konda. Note the Nagari Nose on the extreme left.

Fig. 2. A section across the Nagarimura Konda. Note the dip slope on the left and the escarpment on the right.

Fig. 3. Outcrop of Kuddapah rock on the Mura Konda.

Fig. 4. The top of the Nagari Nose which is composed entirely of quartzites.

Plate XIX. Fig. 5. A wall of Kuddappah rock.

Fig. 6. One of the numerous low hillocks, with which the country described is studded.

Fig. 7. The weathering of granite into tors and blocks.

Fig. 8. Inclusions of hornblende schist in granite gneiss.

**BIBLIOGRAPHY.**

**King, W.** (1872). Kadapah and Karnul formations of the Madras Presidency. *Mem. Geol. Surv. India.* VIII., 3-14.

**Foote, R. B.** (1873). 'Geology of Madras.' *Mem. Geol. Surv. India.* pt. 1. 129.

**Medlicott and Blanford** (1887). 'Geology of India.' pt. 1, page 26.



Plate XVII Fig. 1.

GEOLOGICAL SKETCH MAP OF COUNTRY NEAR NAGARI & NARAYANAVANAM  
SCALE 1" = 1 MILE

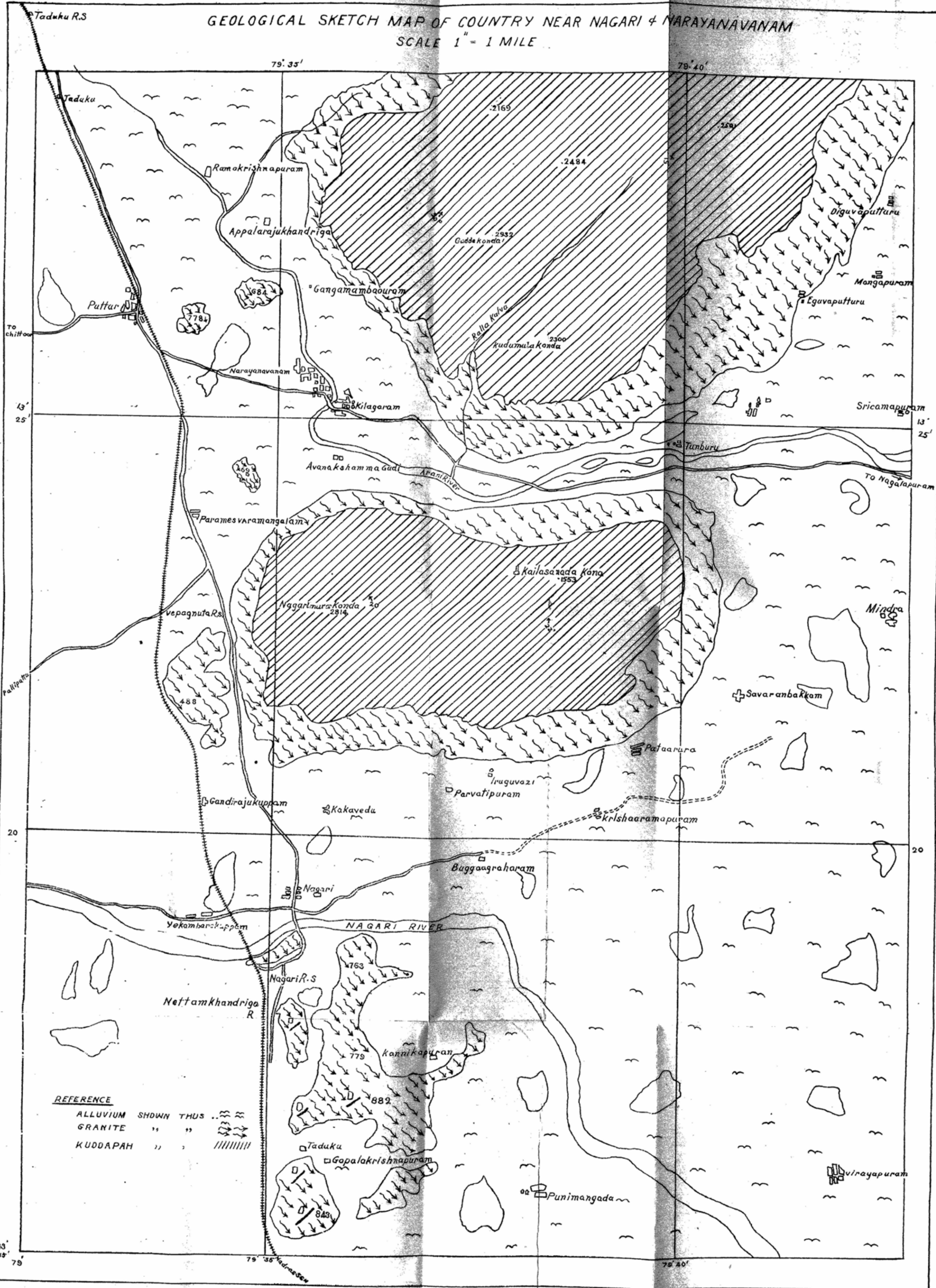






PLATE XVIII.

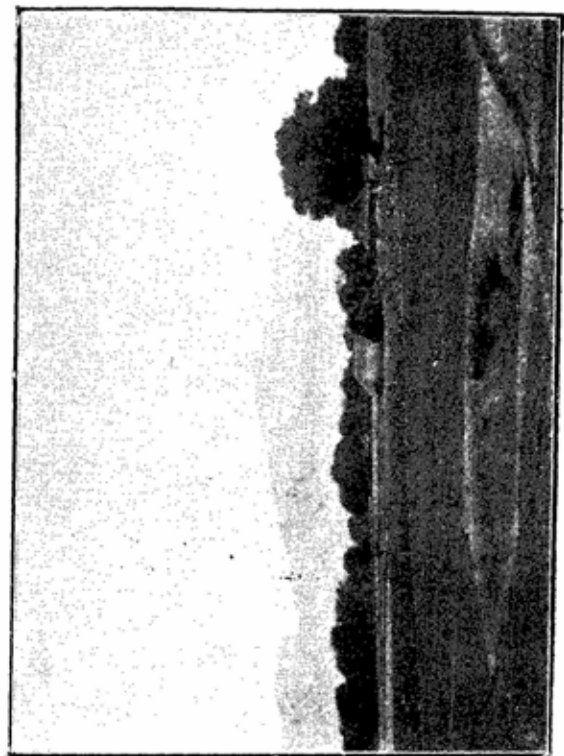


Fig. 2.



Fig. 4.

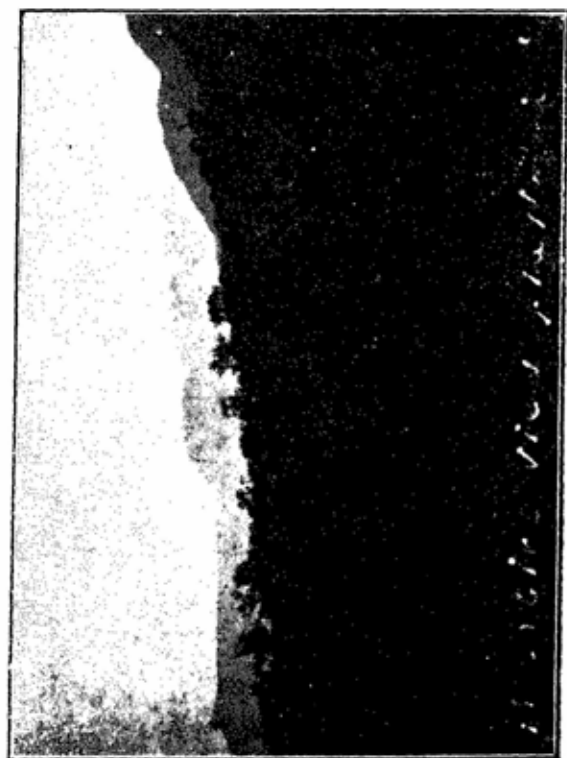


Fig. 1.



Fig. 3.



PLATE XIX.



Fig. 6.



Fig. 8.



Fig. 5.



Fig. 7.

16c

*"A book that is shut is but a block"*

CENTRAL ARCHAEOLOGICAL LIBRARY  
GOVT. OF INDIA  
Department of Archaeology  
NEW DELHI.

Please help us to keep the book  
clean and moving.